Approximate Chi Square Value (.05)	68.73	Nonparametric Statistics	
Adjusted Level of Significance	0.0231	95% CLT UCL	43.54
Adjusted Chi Square Value	64.89	95% Jackknife UCL	44.52
		95% Standard Bootstrap UCL	43.0
Anderson-Darling Test Statistic	0.426	95% Bootstrap-t UCL	44.1
Anderson-Darling 5% Critical Value	0.722	95% Hall's Bootstrap UCL	42.1
Kolmogorov-Smirnov Test Statistic	0.197	95% Percentile Bootstrap UCL	43.1
Kolmogorov-Smirnov 5% Critical Value	0.28	95% BCA Bootstrap UCL	43.0
Data appear Gamma Distributed at 5% Significance	Level	95% Chebyshev(Mean, Sd) UCL	55.9
		97.5% Chebyshev(Mean, Sd) UCL	64.5
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	81.4
95% Approximate Gamma UCL	46.96		
95% Adjusted Gamma UCL	49.74		
Potential UCL to Use		Use 95% Student's-t UCL	44.52

.

APPENDIX C

SOIL BACKGROUND CONCENTRATION TOLERANCE LIMIT CALCULATIONS

APPENDIX C

SOIL BACKGROUND CONCENTRATION TOLERANCE LIMIT CALCULATIONS

Tolerance limits were calculated for background metals analytes using the procedure described in Gibbons, 1994, and used for background Intracoastal Waterway sediments in Appendix B. A step-by-step discussion of these calculations is provided below.

Step 1 - Calculate the Background Mean and Standard Deviation

These parameters were calculated for each background metal using EPA's *PRO UCL* statistical software package (EPA, 2007). These parameters are summarized in Table C-1. The *PRO UCL* output pages are provided in Attachment C-1.

Step 2- Calculate Tolerance Limit

Since the purpose of the tolerance limit is to identify metals concentrations that are higher than background a one-sided upper tolerance limit was calculated.

As provided in Gibbons, the tolerance limit is calculated from:

TL = mean + K * (std. deviation)

Where K is a factor determined from statistical tables based on the number of samples in the background data set and the desired confidence and coverage goals. Consistent with Gibbons, 1994, a 95% confidence level with 95% coverage was used. Based on a background data set of 10 samples and these goals, and using Table 4.2 of Gibbons (see Appendix B), K was set at 2.911 for all background data sets, except for barium and zinc. The resultant upper tolerance limits are listed in Table C-1.

In the case of barium, inspection of the background data set (see Table C-2) indicates one value (1,130 mg/kg) significantly higher than the other nine values (mean of 244 mg/kg), and likely indicative of anthropogenic sources. Although EPA, 2002 does provide for consideration of anthropogenic sources not related to the site of interest when making background comparisons, for conservative purposes and based on discussions with EPA regarding the background zinc data (see below), this anomalously high barium concentration was removed from the background data set prior to calculating the barium tolerance limit. The background barium mean and standard deviation based on the remaining nine background values are listed in Table C-1. These values along with a K factor based on nine samples were used to calculate the barium tolerance limit in Table C-1.

Similarly for zinc, two values in the background data set (Table C-3) are significantly higher than the other eight values, although none of the zinc values were identified as outliers by a statistical test (Dixon's outlier test) using *PRO UCL*. Notwithstanding these findings and per discussions with EPA regarding the spatial distribution of the zinc concentrations within the background area, the two highest zinc concentrations were removed from the background data set prior to calculating the zinc tolerance limit. The background zinc mean and standard deviation based on the remaining eight background values are listed in Table C-1. These values along with a K factor based on eight samples were used to calculate the zinc tolerance limit in Table C-1.

TABLE C-1 - BACKGROUND SAMPLE STATISTICS - SOIL

	Number of Background	Site-Specific Background Values (mg/kg)		
Compound	Samples	Mean	Std. Dev.	Upper Tolerance Limit ⁽¹⁾
Arsenic	9	3.44	1.79	8.66
Barium ⁽²⁾	8	244	72	462
Chromium	9	15.2	3.0	24.0
Copper	9	12.1	4.0	23.6
Lead	9	13.4	1.5	17.9
Lithium	9	21.1	5.2	36.2
Manganese	9	377	94	650
Mercury	9	0.021	0.005	0.035
Molybdenum	9	0.52	0.07	0.74
Zinc (3)	7	76.3	64.0	280

Note:

- (1) One-side upper tolerance limit for 95% confidence and 95% coverage.
- (2) Barium parameters calculated using data set with highest concentration removed.
- (3) Zinc parameters calculated using data set with two highest concentrations removed.

TABLE C-2 - BARIUM CONCENTRATIONS IN BACKGROUND SOIL SAMPLES

Sample Location	Concentration (mg/kg)
BSS-1	322
BSS-2	361
BSS-3	237
BSS-4	281
BSS-5	150
BSS-6	-1130
BSS-7	281
BSS-8	215
BSS-9	177
BSS-10	177

TABLE C-3 - ZINC CONCENTRATIONS IN BACKGROUND SOIL SAMPLES

Sample Location	Concentration (mg/kg)
BSS-1	969
BSS-2	81.2
BSS-3	77
BSS-4	40.9
BSS-5	36.6
BSS-6	890J
BSS-7	227Ј
BSS-8	74J
BSS-9	37.1J
BSS-10	36.8J

Note:

Data qualifier: J = estimated value.

Attachment C-1

Background Soil Data PRO UCL Output Pages

	•
	General UCL Statistics for Full Data Sets
User Selected Options	
From File	J:\1352 - Gulfco RI\risk\eco\Tables for Revisited SLERA\background soil table.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000
Result or 1/2 SDL (antimony)	
General Statistics	
Number of Valid Samples	10 Number of Unique Samples
Raw Statistics	Log-transformed Statistics
Minimum	0.125 Minimum of Log Data

Raw Statistics	Log-transformed Statistics	
Minimum 0.125	Minimum of Log Data -	2.079
Maximum 2.19	Maximum of Log Data	0.784
Mean 0,953	Mean of log Data -	0.711
Median 0.815	SD of log Data	1.345
SD 0.878	·	
Coefficient of Variation 0.921		
Skewness 0.157	•	
Relevant UCL Statistics		
Normal Distribution Test	Lognormal Distribution Test	
Shapiro Wilk Test Statistic 0.775	Shapiro Wilk Test Statistic	0.726
Shapiro Wilk Critical Value 0.842	Shapiro Wilk Critical Value	0.842
Data not Normal at 5% Significance Level	Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution	Assuming Lognormal Distribution	
95% Student's-t UCL 1.462	95% H-UCL	6.827
95% UCLs (Adjusted for Skewness)	95% Chebyshev (MVUE) UCL	3.117
95% Adjusted-CLT UCL 1.424	97.5% Chebyshev (MVUE) UCL	4.01
95% Modified-t UCL 1.464	99% Chebyshev (MVUE) UCL	5.765
Gamma Distribution Test	Data Distribution	
k star (bias corrected) 0.685	Data do not follow a Discernable Distribution (0.05)	
Theta Star 1.39		
nu star 13.71		
Approximate Chi Square Value (.05) 6.373	Nonparametric Statistics	
Adjusted Level of Significance 0.0267	95% CLT UCL	1.41
Adjusted Chi Square Value 5.527	95% Jackknife UCL	1.462

10

Adjusted Chi Square Value	5.527 95% Jackknife UCL	1.462
	95% Standard Bootstrap UCL	1.381
Anderson-Darling Test Statistic	1.346 95% Bootstrap-t UCL	1.452
Anderson-Darling 5% Critical Value	0.752 95% Hall's Bootstrap UCL	1.306
Kolmogorov-Smirnov Test Statistic	0.329 95% Percentile Bootstrap UCL	1.394
Kolmogorov-Smirnov 5% Critical Value	0,275 95% BCA Bootstrap UCL	1.416
Data not Gamma Distributed at 5% Significance Level	95% Chebyshev(Mean, Sd) UCL	2.163
_	97.5% Chebyshev(Mean, Sd) UCL	2.687
Assuming Gamma Distribution	99% Chebyshev(Mean, Sd) UCL	3.715
95% Approximate Gamma UCL	2.05	
95% Adjusted Gamma UCL	2.364	
Potential UCL to Use Recommended UCL exceeds the maximum observation	Use 99% Chebyshev (Mean, Sd) UCL	3.715

Result or 1/2 SDL (arsenic)

General Statistics Number of Valid Samples	10 Number of Unique Samples 10
Raw Statistics	Log-transformed Statistics
Minimum 0	24 Minimum of Log Data -1.427
	.9 Maximum of Log Data 1.775
	38 Mean of log Data 0.985
	25 SD of log Data 0.947
SD 1,7	92
Coefficient of Variation 0.5	21
Skewness -0	35
Relevant UCL Statistics	
Normal Distribution Test	Lognormal Distribution Test
Shapiro Wilk Test Statistic 0.9	46 Shapiro Wilk Test Statistic 0.749
Shapiro Wilk Critical Value 0.8	12 Shapiro Wilk Critical Value 0.842

Data appear Normal at 5% Significance Level	Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution	Assuming Lognormal Distribution	
95% Student's-t UCL	4.477 95% H-UCL	10.79
95% UCLs (Adjusted for Skewness)	95% Chebyshev (MVUE) UCL	9.349
95% Adjusted-CLT UCL	4.303 97.5% Chebyshev (MVUE) UCL	11.68
95% Modified-t UCL	4.466 99% Chebyshev (MVUE) UCL	16.27

0070711001111-11001	
Gamma Distribution Test	Data Distribution
k star (bias corrected)	1.572 Data appear Normal at 5% Significance Level
Theta Star	2.187
nu star	31.44

Approximate Chi Square Value (.05)	19.63	Nonparametric Statistics		
Adjusted Level of Significance	0.0267		4.37	
Adjusted Chi Square Value	18.03	95% Jackknife UCL	4.477	
		95% Standard Bootstrap UCL	4.299	
Anderson-Darling Test Statistic	0.699	95% Bootstrap-t UCL	4.371	
Anderson-Darling 5% Critical Value	0.735	95% Hall's Bootstrap UCL	4.292	
Kolmogorov-Smirnov Test Statistic	0.293	95% Percentile Bootstrap UCL	4,299	
Kolmogorov-Smirnov 5% Critical Value	0.27	95% BCA Bootstrap UCL	4.27	
Data follow Appr. Gamma Distribution at 5% Significance	Level	95% Chebyshev(Mean, Sd) UCL	5.908	
		97.5% Chebyshev(Mean, Sd) UCL	6.976	
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	9.075	•
95% Approximate Gamma UCL	5.507			
95% Adjusted Gamma UCL	5.997			
Potential UCL to Use		Use 95% Student's-t UCL	4.477	
- " "				
Result or 1/2 SDL (barium)				
O constant that con				
General Statistics	40	Alter I and I form Operation	8	
Number of Valid Samples	10	Number of Unique Samples	8	
B 01-11-11		Landan Challetter		
Raw Statistics	450	Log-transformed Statistics	E 044	
Minimum		Minimum of Log Data	5.011 7.03	
Maximum		Maximum of Log Data		
Mean		Mean of log Data	5.617 0.571	
Median SD		SD of log Data	0.571	
Coefficient of Variation	288.1 0.865			
Skewness	2.844			
Chominas	2.044			
Relevant UCL Statistics				
Normal Distribution Test		Lognormal Distribution Test		
Shapiro Wilk Test Statistic	0.59	Shapiro Wilk Test Statistic	0.83	
Shapiro Wilk Critical Value		Shapiro Wilk Critical Value	0.842	
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level		
Assuming Normal Distribution		Assuming Lognormal Distribution		
95% Student's-t UCL	500.1	95% H-UCL	504	
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	573.9	
95% Adjusted-CLT UCL	570.5	97.5% Chebyshev (MVUE) UCL	684.7	
95% Modified-t UCL	513.7	99% Chebyshev (MVUE) UCL	902.2	
Gamma Distribution Test		Data Distribution		
k star (bias corrected)		Data Distribution Data Follow Appr. Gamma Distribution at 5% Signific	cance Level	
	166.1		cance Level	
k star (bias corrected) Theta Star nu star	166.1 40.11	Data Follow Appr. Gamma Distribution at 5% Signific	eance Level	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05)	166.1 40.11 26.6	Data Follow Appr. Gamma Distribution at 5% Signific Nonparametric Statistics		
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance	166.1 40.11 26.6 0.0267	Data Follow Appr. Gamma Distribution at 5% Signific Nonparametric Statistics 95% CLT UCL	482.9	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05)	166.1 40.11 26.6	Data Follow Appr. Gamma Distribution at 5% Signification of Signification of Signification (Signification) at 5% Signification	482.9 500.1	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value	166.1 40.11 26.6 0.0267 24.7	Data Follow Appr. Gamma Distribution at 5% Signific Nonparametric Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL	482.9 500.1 476.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic	166.1 40.11 26.6 0.0267 24.7	Data Follow Appr. Gamma Distribution at 5% Signification of Signification	482.9 500.1 476.3 877.8	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value	166.1 40.11 26.6 0.0267 24.7 1.01 0.733	Data Follow Appr. Gamma Distribution at 5% Signification of Signification	482.9 500.1 476.3 877.8 1100	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268	Data Follow Appr. Gamma Distribution at 5% Signification of Signification	482.9 500.1 476.3 877.8 1100 505.4	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269	Data Follow Appr. Gamma Distribution at 5% Signification Nonparametric Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% Percentile Bootstrap UCL 95% CA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269	Data Follow Appr. Gamma Distribution at 5% Signification Systems of CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% Percentile Bootstrap UCL 95% CA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 E Level	Data Follow Appr. Gamma Distribution at 5% Signification Systems of CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269	Data Follow Appr. Gamma Distribution at 5% Signification Systems of CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 E Level	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 E Level	Data Follow Appr. Gamma Distribution at 5% Signification Systems of CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 E Level	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov 5% Critical Value Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 E Level	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 E Level	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov 5% Critical Value Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 E Level	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use Result or 1/2 SDL (benzo(a)anthracene)	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 9 Level	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use . Result or 1/2 SDL (benzo(a)anthracene) General Statistics	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 9 Level	Data Follow Appr. Gamma Distribution at 5% Signification of Signification	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use . Result or 1/2 SDL (benzo(a)anthracene) General Statistics	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 e Level 502.3 540.9	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Percentile Bootstrap UCL 95% Percentile Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use . Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 e Level 502.3 540.9	Data Follow Appr. Gamma Distribution at 5% Signification of Carlo	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics	166.1 40.11 20.60 20.60 24.7 1.01 0.733 0.268 0.269 a Level 502.3 540.9	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 e Level 502.3 540.9	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 9 Level 502.3 540.9	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use . Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 e Level 502.3 540.9	Data Follow Appr. Gamma Distribution at 5% Signification of Cart UCL 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% Percentile Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 95% Approximate Gamma U	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use . Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 a Level 502.3 540.9 10 0.00323 0.082 0.0116 0.00381 0.0281	Data Follow Appr. Gamma Distribution at 5% Signification Systems of Cart UCL 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 95% Approximate Gamma UCL Use 95% Approximate Gamma UCL Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use . Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 e Level 502.3 540.9	Data Follow Appr. Gamma Distribution at 5% Signification Systems of Cart UCL 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 95% Approximate Gamma UCL Use 95% Approximate Gamma UCL Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 a Level 502.3 540.9 10 0.00323 0.082 0.0116 0.00381 0.0281	Data Follow Appr. Gamma Distribution at 5% Signification Systems of Cart UCL 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 95% Approximate Gamma UCL Use 95% Approximate Gamma UCL Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use . Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Meximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 a Level 502.3 540.9 10 0.00323 0.082 0.0116 0.00381 0.0281	Data Follow Appr. Gamma Distribution at 5% Signification of Carlo	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.269 0.269 e Level 502.3 540.9 10 0.00323 0.082 0.0116 0.00381 0.00381 0.00381 0.00381	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Bootstrap-t UCL 95% Percentile Bootstrap UCL 95% Percentile Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL Use 95% Approximate Gamma UCL Number of Unique Samples Log-transformed Statistics Minimum of Log Data Meximum of Log Data Meximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 9 Level 502.3 540.9 10 0.00323 0.082 0.0116 0.00381 0.0247 2.125 3.16	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Percentile Bootstrap UCL 95% Percentile Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 98% Approximate Gamma UCL Use 95% Approximate Gamma UCL Use 95% Approximate Gamma UCL Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data Distribution Test Shapiro Wilk Test Statistic	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Mean Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 9 Level 502.3 540.9 10 0.00323 0.082 0.0116 0.00381 0.0247 2.125 3.16	Data Follow Appr. Gamma Distribution at 5% Signification of Cart UCL 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Bootstrap-t UCL 95% Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 95% Approximate Gamma UCL Use 95% Approximate	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 9 Level 502.3 540.9 10 0.00323 0.082 0.0116 0.00381 0.0247 2.125 3.16	Data Follow Appr. Gamma Distribution at 5% Signification Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Percentile Bootstrap UCL 95% Percentile Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 98% Approximate Gamma UCL Use 95% Approximate Gamma UCL Use 95% Approximate Gamma UCL Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data Distribution Test Shapiro Wilk Test Statistic	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling Fost Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Critical Value Data not Normal at 5% Significance Level	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 9 Level 502.3 540.9 10 0.00323 0.082 0.0116 0.00381 0.0247 2.125 3.16	Data Follow Appr. Gamma Distribution at 5% Signification Systems of Cartesian Systems of Cart	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	
k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data follow Appr. Gamma Distribution at 5% Significance Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use Result or 1/2 SDL (benzo(a)anthracene) General Statistics Number of Valid Samples Raw Statistics Minimum Mean Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value	166.1 40.11 26.6 0.0267 24.7 1.01 0.733 0.268 0.269 9 Level 502.3 540.9 10 0.00323 0.0116 0.00381 0.0247 2.125 3.16	Data Follow Appr. Gamma Distribution at 5% Signification of Cart UCL 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Bootstrap-t UCL 95% Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 95% Approximate Gamma UCL Use 95% Approximate	482.9 500.1 476.3 877.8 1100 505.4 601.4 730.2 902 1239 502.3	

95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0189
95% Adjusted-CLT UCL	0.0328	97.5% Chebyshev (MVUE) UCL	0.0236
95% Modified-t UCL	0.0273	99% Chebyshev (MVUE) UCL	0.033
Commo Distribution Tost		Data Distribution	
Gamma Distribution Test k star (bias corrected)	0.583	Data Distribution Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.00		
nu star	11.66		
Approximate Chi Square Value (.05)	5.004	Nonparametric Statistics	
Adjusted Level of Significance	0.0267	95% CLT UCL	0.0245
Adjusted Chi Square Value	4.271	95% Jackknife UCL	0,026
		95% Standard Bootstrap UCL	0.0238
Anderson-Darling Test Statistic		95% Bootstrap-t UCL	0.543
Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic		95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL	0.258 0.0272
Kolmogorov-Smirnov 5% Critical Value		95% BCA Bootstrap UCL	0.0272
Data not Gamma Distributed at 5% Significance Level	0.210	95% Chebyshev(Mean, Sd) UCL	0.0457
		97.5% Chebyshev(Mean, Sd) UCL	0.0605
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.0894
95% Approximate Gamma UCL	0.0271		
95% Adjusted Gamma UCL	0.0318		
Potential UCL to Use		Lies 05% Chehyshay (Moan, Sd) LICI	0.0457
Potential OCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.0457
Result or 1/2 SDL (benzo(a)pyrene)			
, , , , ,			
General Statistics			
Number of Valid Samples	10	Number of Unique Samples	7
D 01-11-11		November 1 Alberta Para	
Raw Statistics Minimum	0.00434	Log-transformed Statistics	E 44
Maximum		Minimum of Log Data Maximum of Log Data	-5.44 -2.577
Mean		Mean of log Data	-5,008
Median		SD of log Data	0.863
SD	0.0224		
Coefficient of Variation	1.833		
Skewness	3.157	•	
5 / 110 5 110			
Relevant UCL Statistics		I I Distribution Tool	
Normal Distribution Test Shapiro Wilk Test Statistic	0.304	Lognormal Distribution Test Shapiro Wilk Test Statistic	0.495
Shapiro Wilk Critical Value		Shapiro Wilk Critical Value	0.493
Data not Normal at 5% Significance Level	0.042	Data not Lognormal at 5% Significance Level	0.042
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0252	95% H-UCL	0.0219
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0207
95% Adjusted-CLT UCL		97.5% Chebyshev (MVUE) UCL	0.0257
95% Modified-t UCL	0.0264	99% Chebyshev (MVUE) UCL	0.0354
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.739	Data do not follow a Discemable Distribution (0.05)	
Theta Star	0.0165		
nu star	14.78		
Approximate Chi Square Value (.05)	7.109	Nonparametric Statistics	
Adjusted Level of Significance	0.0267		0.0239
Adjusted Chi Square Value	6.207		0.0252
Andrew Delle Test Ordelle	0.770	95% Standard Bootstrap UCL	0.0233
Anderson-Darling Test Statistic	2.773		0.307
Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic	0.75 0.505		0.171 0.0263
Kolmogorov-Smirnov 5% Critical Value	0.274		0.0334
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.0431
.		97.5% Chebyshev(Mean, Sd) UCL	0.0565
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.0828
95% Approximate Gamma UCL	0.0254		
95% Adjusted Gamma UCL	0.0291		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.0431
Foteritial OCL to Use		Ose 95% Chebyshev (Mean, 5d) OCL	0.0431
Result or 1/2 SDL (benzo(b)fluoranthene)			
General Statistics			
Number of Valid Samples	10	Number of Unique Samples	10
David Obellation		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
Raw Statistics	0.00040	Log-transformed Statistics	E 050
Minimum Maximum		Minimum of Log Data Maximum of Log Data	-5.658 -2.865
Mean		Mean of log Data	-2.865 -5.234
Median		SD of log Data	0.84
SD	0.0167		5.57
Coefficient of Variation	1.777		
Skewness	3.157		

Relevant UCL Statistics Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.393	Shapiro Wilk Test Statistic	0.497
Shapiro Wilk Critical Value		Shapiro Wilk Critical Value	0.842
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0191		0.0166
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.016
95% Adjusted-CLT UCL		97.5% Chebyshev (MVUE) UCL	0.0198
95% Modified-t UCL	0.02	99% Chebyshev (MVUE) UCL	0.0272
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.777	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0121	, ,	
nu star	15.53		
Approximate Chi Square Value (.05)		Nonparametric Statistics	0.0404
Adjusted Level of Significance Adjusted Chi Square Value	0.0267 6.692		0.0181 0.0191
Adjusted Citi Square Value	0.032	95% Standard Bootstrap UCL	0.0131
Anderson-Darling Test Statistic	2.757		0.231
Anderson-Darling 5% Critical Value	0.748		0.116
Kolmogorov-Smirnov Test Statistic	0.496	•	0.02
Kolmogorov-Smirnov 5% Critical Value	0.274	95% BCA Bootstrap UCL	0.0252
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	0.0325 0.0424
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.062
95% Approximate Gamma UCL	0.0192		
95% Adjusted Gamma UCL	0.0218		
D-t#-1101 t- 11		Han OSOV Observations (Manage Od) HOL	0.0005
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.0325
Result or 1/2 SDL (benzo(g,h,i)perylene)			
General Statistics			
Number of Valid Samples	10	Number of Unique Samples	9
		The man of the state of the sta	
Raw Statistics		Log-transformed Statistics	
Minimum		Minimum of Log Data	-4.2
Maximum		Maximum of Log Data	-2.489 -3.896
Mean Median		Mean of log Data SD of log Data	0,508
SD	0.0208		0.000
Coefficient of Variation	0.866		
Skewness	3.104		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.458	Shapiro Wilk Test Statistic	0.581
Shapiro Wilk Critical Value		Shapiro Wilk Critical Value	0.842
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Narmal Distribution		Accuming Lagranged Distribution	
Assuming Normal Distribution 95% Student's-t UCL	0.0361	Assuming Lognormal Distribution 95% H-UCL	0.0337
95% UCLs (Adjusted for Skewness)	0.0001	95% Chebyshev (MVUE) UCL	0.0391
95% Adjusted-CLT UCL	0.0418	97.5% Chebyshev (MVUE) UCL	0.0461
95% Modified-t UCL	0.0372	99% Chebyshev (MVUE) UCL	0.0599
Occurs Bioloffeeding Total		Data Distribution	
Gamma Distribution Test k star (bias corrected)	2 254	Data Distribution Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0107		
nu star	45.09		
Approximate Chi Square Value (.05)		Nonparametric Statistics	
Adjusted Level of Significance	0.0267		0.0349
Adjusted Chi Square Value	28,63		0.0361
Anderson-Darling Test Statistic	2.124	95% Standard Bootstrap UCL 95% Bootstrap-t UCL	0.034 0.111
Anderson-Darling 5% Critical Value	0.732		0.0864
Kolmogorov-Smirnov Test Statistic	0.417		0.0365
Kolmogorov-Smirnov 5% Critical Value	0.268		0.038
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.0527
Assuming Gamma Distribution		97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL	0.0652 0.0895
95% Approximate Gamma UCL	0.0353		3,5535
95% Adjusted Gamma UCL	0.0379		
D (()) D ()			0.0507
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.0527
Result or 1/2 SDL (benzo(k)fluoranthene)			
General Statistics			
Number of Valid Samples	10	Number of Unique Samples	7
Dow Statistics		I as transformed Statistics	
Raw Statistics		Log-transformed Statistics	

Minimum Maximum Mean Median SD Coefficient of Variation Skewness	0.00493 Minimum of Log Data 0.106 Maximum of Log Data 0.0158 Mean of log Data 0.00575 SD of log Data 0.0317 2 3.16	-5.313 -2.244 -4.861 0.927
Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level	Lognormal Distribution Test 0.386 Shapiro Wilk Test Statistic 0.842 Shapiro Wilk Critical Value Data not Lognormal at 5% Significanc	0.483 0.842 se Level
Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL	Assuming Lognormal Distribution 0.0342 95% H-UCL 95% Chebyshev (MVUE) UCL 0.043 97.5% Chebyshev (MVUE) UCL 0.0359 99% Chebyshev (MVUE) UCL	0.0296 0.0263 0.0328 0.0455
Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05)	Data Distribution 0.644 Data do not follow a Discernable Distr 0.0246 12.88 5.815 Nonparametric Statistics	
Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic	0.0267 95% CLT UCL 5.014 95% Jackknife UCL 95% Standard Bootstrap UCL 2.864 95% Bootstrap-t UCL 0.754 95% Hall's Bootstrap UCL 0.505 95% Percentile Bootstrap UCL	0.0323 0.0342 0.0311 0.608 0.269 0.0358
Kolmogorov-Smirnov 5% Critical Value Data not Gamma Distributed at 5% Significance Level Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL	0.275 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 0.0351 0.0407	0.046 0.0595 0.0784 0.116
Potential UCL to Use	Use 95% Chebyshev (Mean, Sd) UCL	0.0595
Result or 1/2 SDL (cadmium)		
General Statistics Number of Valid Samples	10 Number of Unique Samples	8
	10 Number of Unique Samples Log-transformed Statistics 0.0075 Minimum of Log Data 0.11 Maximum of Log Data 0.0311 Mean of log Data 0.0095 SD of log Data 0.0398 1.283 1.571	4.893 -2.207 -4.091 1.081
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation	Log-transformed Statistics 0.0075 Minimum of Log Data 0.11 Maximum of Log Data 0.0311 Mean of log Data 0.0095 SD of log Data 0.0398 1.283	-4.893 -2.207 -4.091 1.081 0.713
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value	Log-transformed Statistics 0.0075 Minimum of Log Data 0.11 Maximum of Log Data 0.0311 Mean of log Data 0.0095 SD of log Data 0.0398 1.283 1.571 Lognormal Distribution Test 0.641 Shapiro Wilk Test Statistic 0.842 Shapiro Wilk Critical Value	-4.893 -2.207 -4.091 1.081 0.713
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star	Log-transformed Statistics 0.0075 Minimum of Log Data 0.11 Maximum of Log Data 0.0311 Mean of log Data 0.0095 SD of log Data 0.0098 1.283 1.571 Lognormal Distribution Test 0.641 Shapiro Wilk Test Statistic 0.842 Shapiro Wilk Test Statistic 0.842 Shapiro Wilk Critical Value Data not Lognormal at 5% Significance Assuming Lognormal Distribution 0.0541 95% H-UCL 95% Chebyshev (MVUE) UCL 0.0585 97.5% Chebyshev (MVUE) UCL 0.0552 99% Chebyshev (MVUE) UCL Data Distribution 0.725 Data do not follow a Discernable Distribution 0.0428 14.5	-4.893 -2.207 -4.091 1.081 0.713 0.842 te Level 0.0974 0.071 0.0898 0.127
Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value	Log-transformed Statistics 0.0075 Minimum of Log Data 0.11 Maximum of Log Data 0.0311 Mean of log Data 0.0095 SD of log Data 0.0098 1.283 1.571 Lognormal Distribution Test 0.641 Shapiro Wilk Test Statistic 0.842 Shapiro Wilk Test Statistic 0.842 Shapiro Wilk Critical Value Data not Lognormal at 5% Significance Assuming Lognormal Distribution 0.0541 95% H-UCL 95% Chebyshev (MVUE) UCL 0.0585 97.5% Chebyshev (MVUE) UCL 0.0552 99% Chebyshev (MVUE) UCL 0.0428 Data Distribution 0.725 Data do not follow a Discernable Distribution 0.725 Data do not follow a Discernable Distribution 0.726 0.0428 14.5 6.912 Nonparametric Statistics 0.0267 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL	-4.893 -2.207 -4.091 1.081 0.713 0.842 0.0974 0.071 0.0898 0.127 ribution (0.05)
Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance	Log-transformed Statistics 0.0075 Minimum of Log Data 0.11 Maximum of Log Data 0.0311 Mean of log Data 0.0095 SD of log Data 0.0098 1.283 1.571 Lognormal Distribution Test 0.641 Shapiro Wilk Test Statistic 0.842 Shapiro Wilk Critical Value Data not Lognormal at 5% Significanc Assuming Lognormal Distribution 0.0541 95% H-UCL 95% Chebyshev (MVUE) UCL 0.0552 97.5% Chebyshev (MVUE) UCL 0.0552 99% Chebyshev (MVUE) UCL 0.725 Data do not follow a Discernable Distr 0.0428 14.5 6.912 Nonparametric Statistics 0.0267 95% CLT UCL 6.025 95% Jackknife UCL	-4.893 -2.207 -4.091 1.081 0.713 0.842 te Level 0.0974 0.071 0.0898 0.127 ribution (0.05)
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling Test Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic	Log-transformed Statistics 0.0075 Minimum of Log Data 0.11 Maximum of Log Data 0.0311 Mean of log Data 0.0395 SD of log Data 0.0398 1.283 1.571 Lognormal Distribution Test 0.641 Shapiro Wilk Test Statistic 0.842 Shapiro Wilk Test Statistic 0.842 Shapiro Wilk Critical Value Data not Lognormal at 5% Significance Assuming Lognormal Distribution 0.0541 95% H-UCL 95% Chebyshev (MVUE) UCL 0.0552 99% Chebyshev (MVUE) UCL 0.0552 99% Chebyshev (MVUE) UCL 0.725 Data do not follow a Discernable Distr 0.0428 14.5 6.912 Nonparametric Statistics 0.0267 95% CLT UCL 6.025 95% Standard Bootstrap UCL 1.584 95% Bootstrap-t UCL 0.75 95% Hall's Bootstrap UCL 0.71 95% BCA Bootstrap UCL 0.741 95% BCA Bootstrap UCL 0.757 95% BCA Bootstrap UCL 0.757 95% BCA Bootstrap UCL	-4.893 -2.207 -4.091 1.081 0.713 0.842 0.0974 0.071 0.0898 0.127 ribution (0.05) 0.0541 0.0507 0.105 0.0699 0.0515 0.0581 0.086

Recommended UCL exceeds the maximum observation

Result or 1/2 SDL (carbazole)

Result or 1/2 SDL (carbazole)			
General Statistics Number of Valid Samples	10	Number of Unique Samples	9
Raw Statistics		Log-transformed Statistics	
Minimum	0.00376	Minimum of Log Data	-5.583
Maximum		Maximum of Log Data	-4.51
Mean		Mean of log Data	-5.328
Median SD	0.00443	SD of log Data	0.312
Coefficient of Variation	0.00214		
Skewness	2.781		
Relevant UCL Statistics			
Normal Distribution Test	0.000	Lognormal Distribution Test	0.701
Shapiro Wilk Test Statistic Shapiro Wilk Critical Value		Shapiro Wilk Test Statistic Shapiro Wilk Critical Value	0.731 0.842
Data not Normal at 5% Significance Level	0,042	Data not Lognormal at 5% Significance Level	0.042
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.00636		0.00627
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.00727
95% Adjusted-CLT UCL		97.5% Chebyshev (MVUE) UCL	0,00822
95% Modified-t UCL	0.00646	99% Chebyshev (MVUE) UCL	0.0101
Gamma Distribution Test		Data Distribution	
k star (bias corrected)		Data do not follow a Discernable Distribution (0.05)	
Theta Star nu star	7.57E-04 135.2		
Approximate Chi Square Value (.05)		Nonparametric Statistics	
Adjusted Level of Significance	0.0267		0.00623
Adjusted Chi Square Value	105.3	95% Jackknife UCL	0,00636
		95% Standard Bootstrap UCL	0.0062
Anderson-Darling Test Statistic		95% Bootstrap-t UCL	0.00912
Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic		95% Hall's Bootstrap UCL 95% Percentile Bootstrap UCL	0.0106 0.00636
Kolmogorov-Smirnov 5% Critical Value	0.267	•	0.00679
Data not Gamma Distributed at 5% Significance Level	0.201	95% Chebyshev(Mean, Sd) UCL	0.00807
		97.5% Chebyshev(Mean, Sd) UCL	0.00934
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.0119
95% Approximate Gamma UCL	0.00633		
95% Adjusted Gamma UCL	0.00657		
Potential UCL to Use		Use 95% Student's-t UCL	0.00636
		or 95% Modified-t UCL	0.00646
Result or 1/2 SDL (chromium)			
General Statistics			
Number of Valid Samples	10	Number of Unique Samples	9
Raw Statistics		Log-transformed Statistics	
Minimum	10.7	Minimum of Log Data	2.37
Maximum	20.1	Maximum of Log Data	3.001
Mean		Mean of log Data	2.703
Median		SD of log Data	0.199
SD Coefficient of Variation	3.02 0.199		
Skewness	0.133		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0,936	Shapiro Wilk Test Statistic	0.945
Shapiro Wilk Critical Value	0.842	Shapiro Wilk Critical Value	0.842
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	16.95	95% H-UCL	17.26
95% UCLs (Adjusted for Skewness)	40.00	95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL	19.39 21.21
95% Adjusted-CLT UCL 95% Modified-t UCL	16.86		21.21 24.77
Gamma Distribution Tost		• •	
Gamma Distribution Test k star (bias corrected)	10.81	Data Distribution Data appear Normal at 5% Significance Level	
Theta Star	0.767		
nu star	396.2		
Approximate Chi Square Value (.05)	000.2		
	. 351.1	Nonparametric Statistics	
Adjusted Level of Significance	. 351.1 0.0267	95% CLT UCL	16.77
	. 351.1	95% CLT UCL 95% Jackknife UCL	16.95
Adjusted Level of Significance	. 351.1 0.0267	95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL	

Anderson-Darling 5% Critical Value	0.725	95% Hall's Bootstrap UCL	16.75
Kolmogorov-Smirnov Test Statistic	0.205	95% Percentile Bootstrap UCL	16.71
Kolmogorov-Smirnov 5% Critical Value		95% BCA Bootstrap UCL	16.74
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	19.36
		97.5% Chebyshev(Mean, Sd) UCL	21.16
Assuming Gamma Distribution	47.45	99% Chebyshev(Mean, Sd) UCL	24.7
95% Approximate Gamma UCL	17.15		
95% Adjusted Gamma UCL	17.52		
Potential UCL to Use		Use 95% Student's-t UCL	16.95
1 Sternial COL to Ose		USE 55 % Student s-t OCL	10.55
1			
Result or 1/2 SDL (chrysene)			
, , , , , , , , , , , , , , , , , , ,			
General Statistics			
Number of Valid Samples	10	Number of Unique Samples	6
•		, .	
Raw Statistics		Log-transformed Statistics	
Minimum		Minimum of Log Data	-5.116
Maximum		Maximum of Log Data	-2.489
Mean		Mean of log Data	-4.742
Median SD		SD of log Data	0.8
Coefficient of Variation	0.0241 1.668		
Skewness	3,156		
OROWI (ESS	3,130	•	
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.395	Shapiro Wilk Test Statistic	0.493
Shapiro Wilk Critical Value		Shapiro Wilk Critical Value	0.842
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	•
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0284	95% H-UCL	0.0247
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0247
95% Adjusted-CLT UCL 95% Modified-t UCL		97.5% Chebyshev (MVUE) UCL	0.0305
95% Wodilled-LOCE	0,0297	99% Chebyshev (MVUE) UCL	0.0417
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.856	Data do not follow a Discernable Distribution (0,05)	
Theta Star	0.0169		
nu star	17.12		
Approximate Chi Square Value (.05)	8.758	Nonparametric Statistics	
Adjusted Level of Significance		95% CLT UCL	0.027
Adjusted Chi Square Value	7.74	95% Jackknife UCL	0.0284
		95% Standard Bootstrap UCL	0.0264
Anderson-Darling Test Statistic		95% Bootstrap-t UCL	0.307
Anderson-Darling 5% Critical Value		95% Hall's Bootstrap UCL	0.154
Kolmogorov-Smirnov Test Statistic		95% Percentile Bootstrap UCL	0.0296
Kolmogorov-Smirnov 5% Critical Value	0.273	95% BCA Bootstrap UCL	0.0372
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.0477 0.062
Assuming Gamma Distribution		97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL	0.092
95% Approximate Gamma UCL	0.0282		0.0503
95% Adjusted Gamma UCL	0.032		
	0,002		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.0477
		, , ,	
Result or 1/2 SDL (copper)			
General Statistics		Alcordon of Holeson C	
Number of Valid Samples	10	Number of Unique Samples	10
Raw Statistics		Log-transformed Statistics	
Minimum	7 60	Minimum of Log Data	2.039
Maximum		Maximum of Log Data	2.96
Mean		Mean of log Data	2.449
Median		SD of log Data	0.313
SD	3,955	5	
Coefficient of Variation	0.326		
Skewness	0.802		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic		Shapiro Wilk Test Statistic	0.948
Shapiro Wilk Critical Value	0.842	Shapiro Wilk Critical Value	0.842
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	14 41	95% H-UCL	14.96
95% UCLs (Adjusted for Skewness)	17.71	95% Chebyshev (MVUE) UCL .	17.35
95% Adjusted-CLT UCL	14.51	97.5% Chebyshev (MVUE) UCL	19.63
95% Modified-t UCL.		99% Chebyshev (MVUE) UCL	24.1
		- •	
Gamma Distribution Test		Data Distribution	

k star (bias corrected) Theta Star	7.922 1.529	Data appear Normal at 5% Significance Level	
nu star	158.4		
Approximate Chi Square Value (.05)		Nonparametric Statistics	=
Adjusted Level of Significance	0.0267		14.17
Adjusted Chi Square Value	125.9	95% Jackknife UCL 95% Standard Bootstrap UCL	14.41 14.08
Anderson-Darling Test Statistic	0.317		15.03
Anderson-Darling 5% Critical Value	0.725		14.63
Kolmogorov-Smirnov Test Statistic	0.175	•	14.04
Kolmogorov-Smirnov 5% Critical Value	0.267		14.54
Data appear Gamma Distributed at 5% Significance Level	l	95% Chebyshev(Mean, Sd) UCL	17.57
		97.5% Chebyshev(Mean, Sd) UCL	19.93
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	24.56
95% Approximate Gamma UCL 95% Adjusted Gamma UCL	14.73		
95% Adjusted Gamma OCL	15.25		
Potential UCL to Use		Use 95% Student's-t UCL	14.41
Result or 1/2 SDL (fluoranthene)			
Conoral Statistics			
General Statistics Number of Valid Samples	10	Number of Unique Samples	7
Number of Valid Gamples	10	Number of Offique Camples	•
Raw Statistics		Log-transformed Statistics	
Minimum	0.00486	Minimum of Log Data	-5.328
Maximum		Maximum of Log Data	-1.858
Mean		Mean of log Data	-4.834
Median		SD of log Data	1.053
SD Coefficient of Verioties	0.0475		
Coefficient of Variation Skewness	2.286 3.161		
Chemicas	0.101		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic		Shapiro Wilk Test Statistic	0.477
Shapiro Wilk Critical Value	0.842	Shapiro Wilk Critical Value	0.842
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0483		0.0428
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0324
95% Adjusted-CLT UCL		97.5% Chebyshev (MVUE) UCL	0.0409
95% Modified-t UCL	0.0508	99% Chebyshev (MVUE) UCL	0.0575
O Bistallantias Tank		D. La Dist Northead	
Gamma Distribution Test k star (bias corrected)	0.513	Data Distribution Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0405		
nu star	10.26		
Approximate Chi Square Value (.05)		Nonparametric Statistics	
Adjusted Level of Significance	0.0267		0.0455
Adjusted Chi Square Value	3.456		0.0483
		95% Standard Bootstrap UCL	0.0443
Anderson-Darling Test Statistic	2,929		1.171
Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic	0.766 0.515		0.527 0.0508
Kolmogorov-Smirnov Test Statistic	0.278		0.0659
Data not Gamma Distributed at 5% Significance Level	0.270	95% Chebyshev(Mean, Sd) UCL	0.0863
		97.5% Chebyshev(Mean, Sd) UCL	0.115
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.17
95% Approximate Gamma UCL	0.0519		
95% Adjusted Gamma UCL	0.0617		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	0.17
Recommended UCL exceeds the maximum observation		Use 95% Chebyshev (Moan, Su) UCL	0.17
Tresentinended de execute tile maximani opportation			
D 4 400D (14 4400)			
Result or 1/2 SDL (indeno(1,2,3-cd)pyrene)			
General Statistics			
Number of Valid Samples	10	Number of Unique Samples	9
Raw Statistics		Log-transformed Statistics	
Minimum		Minimum of Log Data	-4.382
Maximum		Maximum of Log Data	-0.875
Mean		Mean of log Data	-3.88
Median SD	0,0148 0,127	SD of log Data	1.063
Coefficient of Variation	2.308		
Skewness	3.161		
	231		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic		Shapiro Wilk Test Statistic	0.47
Shapiro Wilk Critical Value	U.842	Shapiro Wilk Critical Value	0.842

Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.129	95% H-UCL	0.114
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0853
95% Adjusted-CLT UCL		97.5% Chebyshev (MVUE) UCL	0.108
95% Modified-t UCL	0.136	99% Chebyshev (MVUE) UCL	0.152
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.505	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.109		
nu star	10.09		
Approximate Chi Square Value (.05)		Nonparametric Statistics	0.404
Adjusted Level of Significance Adjusted Chi Square Value	0.0267	95% CLT UCL 95% Jackknife UCL	0.121 0.129
Adjusted Offi Square Value	3.30	95% Standard Bootstrap UCL	0.123
Anderson-Darling Test Statistic	2.966	95% Bootstrap-t UCL	3.62
Anderson-Darling 5% Critical Value	0.767		1.642
Kolmogorov-Smirnov Test Statistic		95% Percentile Bootstrap UCL	0.135
Kolmogorov-Smirnov 5% Critical Value	0.278	95% BCA Bootstrap UCL	0.175 0.23
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	0.306
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.455
95% Approximate Gamma UCL	0.139		
95% Adjusted Gamma UCL	0.166	•	
Detect HINL to He		H = 000/ OL - house (84 O. IV 110)	0.455
Potential UCL to Use Recommended UCL exceeds the maximum observation		Use 99% Chebyshev (Mean, Sd) UCL	0.455
Accommended OOL exceeds the maximum observation			
D			
Result or 1/2 SDL (lead)			
General Statistics			
Number of Valid Samples	10	Number of Unique Samples	9
B 0.55		I I C - d Ol-Walland	
Raw Statistics Minimum	44	Log-transformed Statistics Minimum of Log Data	2.398
Maximum		Maximum of Log Data	2.721
Mean		Mean of log Data	2.591
Median	13.35	SD of log Data	0.118
SD	1.547		
Coefficient of Variation	0.115		
Skewness	-0.326		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic		Shapiro Wilk Test Statistic	0.909
Shapiro Wilk Critical Value	0.842	Shapiro Wilk Critical Value	0.842
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	14.33	95% H-UCL	14.43
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	15.62
95% Adjusted-CLT UCL		97.5% Chebyshev (MVUE) UCL	16.56
95% Modified-t UCL	14.32	99% Chebyshev (MVUE) UCL	18.42
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	57	Data appear Normal at 5% Significance Level	
Theta Star	0.236		
nu star	1140		
Approximate Chi Square Value (.05)		Nonparametric Statistics 95% CLT UCL	14.23
Adjusted Level of Significance Adjusted Chi Square Value	0.0267 1050		14.23
And and a state of the state of	,,,,,	95% Standard Bootstrap UCL	14.18
Anderson-Darling Test Statistic	0.379	95% Bootstrap-t UCL	14.21
Anderson-Darling 5% Critical Value	0.724		14.11
Kolmogorov-Smirnov Test Statistic	0.169		14.17
Kolmogorov-Smirnov 5% Critical Value Data appear Gamma Distributed at 5% Significance Level	0.266	95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL	14.15 15.56
Data appear Canima Distributed at 5% dignificance Level		97.5% Chebyshev(Mean, Sd) UCL	16.49
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	18.3
95% Approximate Gamma UCL	14.41		
95% Adjusted Gamma UCL	14.59		
Potential UCL to Use		Use 95% Student's-t UCL	14.33
Poteritial OCE to ose		Ose 55 % Student s-t OOL	14.55
Result or 1/2 SDL (lithium)			
General Statistics			
Number of Valid Samples	10	Number of Unique Samples	10
Raw Statistics		Log-transformed Statistics	
Minimum	14.4	Minimum of Log Data	2.667
Maximum		Maximum of Log Data	3.481
Mean		Mean of log Data	3.027

Median		SD of log Data	0.229	
SD	5.166	or or log bala	0.220	
Coefficient of Variation	0.244			
Skewness	1.214			
Relevant UCL Statistics				
Normal Distribution Test		Lognormal Distribution Test		
Shapiro Wilk Test Statistic		Shapiro Wilk Test Statistic	0.965	
Shapiro Wilk Critical Value	0.842	Shapiro Wilk Critical Value	0.842	
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level		
Assuming Normal Distribution		Assuming Lognormal Distribution		
95% Student's-t UCL	24 13	95% H-UCL	24,5	
95% UCLs (Adjusted for Skewness)	21.10	95% Chebyshev (MVUE) UCL	27.82	
95% Adjusted-CLT UCL	24 5	97.5% Chebyshev (MVUE) UCL	30.72	
95% Modified-t UCL		99% Chebyshev (MVUE) UCL	36,42	
55% Modified t GOE	27.27	30 % Offebyshov (MIVOL) COL	00.42	
Gamma Distribution Test		Data Distribution		
k star (bias corrected)	14.43	Data appear Normal at 5% Significance Level		
Theta Star	1.465			
nu star	288,6			
Approximate Chi Square Value (.05)	250.3	Nonparametric Statistics		
Adjusted Level of Significance	0.0267	95% CLT UCL	23.83	
Adjusted Chi Square Value	244.1	95% Jackknife UCL	24.13	
		95% Standard Bootstrap UCL	23.71	
Anderson-Darling Test Statistic	0.311	95% Bootstrap-t UCL	26.29	
Anderson-Darling 5% Critical Value		95% Hall's Bootstrap UCL	40.64	
Kolmogorov-Smirnov Test Statistic	0.2	95% Percentile Bootstrap UCL	23.88	
Kolmogorov-Smirnov 5% Critical Value		95% BCA Bootstrap UCL	24.4	
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	28.26	
-		97.5% Chebyshev(Mean, Sd) UCL	31.34	
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	37.39	
95% Approximate Gamma UCL	24.38	- ,		
95% Adjusted Gamma UCL	25			
Potential UCL to Use		Use 95% Student's-t UCL	24.13	
, 3.3				
Result or 1/2 SDL (manganese)				
	10	Number of Unique Samples	۵	
	10	Number of Unique Samples	9	
Number of Valid Samples	10		9	
Number of Valid Samples Raw Statistics		Log-transformed Statistics	9 5.649	
Number of Valid Samples Raw Statistics Minimum	284	Log-transformed Statistics Minimum of Log Data		
Number of Valid Samples Raw Statistics Minimum Maximum	284 551	Log-transformed Statistics Minimum of Log Data Maximum of Log Data	5.649 6.312	
Number of Valid Samples Raw Statistics Minimum Maximum Mean	284 551 377.4	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data	5.649	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median	284 551 377.4	Log-transformed Statistics Minimum of Log Data Maximum of Log Data	5.649 6.312 5.909	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD	284 551 377.4 333 93.76	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data	5.649 6.312 5.909	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation	284 551 377.4 333	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data	5.649 6.312 5.909	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness	284 551 377.4 333 93.76 0.248	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data	5.649 6.312 5.909	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics	284 551 377.4 333 93.76 0.248	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data	5.649 6.312 5.909	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test	284 551 377.4 333 93.76 0.248 1.28	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test	5.649 6.312 5.909 0.227	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic	284 551 377.4 333 93.76 0.248 1.28	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic	5.649 6.312 5.909 0.227	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value	284 551 377.4 333 93.76 0.248 1.28	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value	5.649 6.312 5.909 0.227	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value	284 551 377.4 333 93.76 0.248 1.28	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic	5.649 6.312 5.909 0.227	
Number of Valid Samples Raw Statistics Minimum Maximum Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level	284 551 377.4 333 93.76 0.248 1.28	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value	5.649 6.312 5.909 0.227	
Number of Valid Samples Raw Statistics Minimum Maximum Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level	284 551 377.4 333 93.76 0.248 1.28	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution	5.649 6.312 5.909 0.227	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal Distribution	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution	5.649 6.312 5.909 0.227	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL	5.649 6.312 5.909 0.227 0.843 0.842	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness)	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4	
Number of Valid Samples Raw Statistics Minimum Maximum Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6	
Number of Valid Samples Raw Statistics Minimum Maximum Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6	
Number of Valid Samples Raw Statistics Minimum Maximum Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected)	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data SD of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6	
Number of Valid Samples Raw Statistics Minimum Maximum Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05)	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data SD of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Jackknife UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4	
Number of Valid Samples Raw Statistics Minimum Maximum Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267 243.1	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Standard Bootstrap UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4	
Number of Valid Samples Raw Statistics Minimum Maximum Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267 243.1 0.85	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Standard Bootstrap UCL 95% Standard Bootstrap UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling Test Statistic Anderson-Darling Test Statistic	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267 243.1 0.85 0.725	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data SD of log Data SD of log Data SD of log Data Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-1 UCL 95% Bootstrap-1 UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267 243.1 0.85 0.725 0.725	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Standard Bootstrap UCL 95% Bootstrap-I UCL 95% Bootstrap-I UCL 95% Percentile Bootstrap UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4 426.2 431.8 422.7 494.2 681.2 425.6	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling Test Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267 243.1 0.85 0.725 0.725	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Tristical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% BCA Bootstrap UCL	5.649 6.312 5.909 0.227 0.843 0.843 0.842 436.5 495.4 546.6 647.4 426.2 431.8 422.7 494.2 681.2 425.6 436.6	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling Test Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267 243.1 0.85 0.725 0.725	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Standard Bootstrap UCL 95% Bootstrap-1 UCL 95% Bootstrap-1 UCL 95% Percentile Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% BCA Bootstrap UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4 426.2 431.8 422.7 494.2 681.2 425.6 436.6 506.6	
Number of Valid Samples Raw Statistics Minimum Maximum Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Addjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov 7% Critical Value Kolmogorov-Smirnov 7% Critical Value	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267 243.1 0.85 0.725 0.725	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Tristical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Hall's Bootstrap UCL 95% BCA Bootstrap UCL	5.649 6.312 5.909 0.227 0.843 0.843 0.842 436.5 495.4 546.6 647.4 426.2 431.8 422.7 494.2 681.2 425.6 436.6	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Level of Significance Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling Test Statistic Colmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic Level Data not Gamma Distributed at 5% Significance Level	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267 243.1 0.85 0.725 0.725	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Standard Bootstrap UCL 95% Bootstrap-1 UCL 95% Bootstrap-1 UCL 95% Percentile Bootstrap UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% BCA Bootstrap UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4 426.2 431.8 422.7 494.2 681.2 425.6 436.6 506.6	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Level of Significance Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling Test Statistic Colmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic Level Data not Gamma Distributed at 5% Significance Level	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267 243.1 0.85 0.725 0.725	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data SD of log Data SD of log Data SD of log Data Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Oata Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Bootstrap-t UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev (Mean, Sd) UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4 426.2 431.8 422.7 494.2 681.2 425.6 436.6 506.6 506.6	
95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling Test Statistic Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data not Gamma Distributed at 5% Significance Level Assuming Gamma Distribution	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267 243.1 0.85 0.725 0.284 0.266	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data SD of log Data SD of log Data SD of log Data Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Oata Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Bootstrap-t UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev (Mean, Sd) UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4 426.2 431.8 422.7 494.2 681.2 425.6 436.6 506.6 506.6	
Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Level of Significance Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling Test Statistic Colmogorov-Smirnov Test Statistic Kolmogorov-Smirnov Test Statistic Colmogorov-Smirnov Test Statistic Anderson-Darling Test Statisti	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267 243.1 0.85 0.725 0.284 0.266	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data SD of log Data SD of log Data SD of log Data Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Standard Bootstrap UCL 95% Bootstrap-1 UCL 95% Bootstrap-1 UCL 95% Percentile Bootstrap UCL 95% Percentile Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4 426.2 431.8 422.7 494.2 681.2 425.6 436.6 506.6 562.6 672.4	
Number of Valid Samples Raw Statistics Minimum Maximum Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Addjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling Test Statistic Kolmogorov-Smirnov 5% Critical Value Data not Gamma Distribution 95% Approximate Gamma UCL	284 551 377.4 333 93.76 0.248 1.28 0.796 0.842 431.8 439 433.8 14.38 26.25 287.6 249.3 0.0267 243.1 0.85 0.725 0.284 0.266	Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data SD of log Data SD of log Data SD of log Data Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Oata Distribution Data appear Lognormal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Bootstrap-t UCL 95% Bootstrap-t UCL 95% Percentile Bootstrap UCL 95% BCA Bootstrap UCL 95% BCA Bootstrap UCL 95% Chebyshev (Mean, Sd) UCL	5.649 6.312 5.909 0.227 0.843 0.842 436.5 495.4 546.6 647.4 426.2 431.8 422.7 494.2 681.2 425.6 436.6 506.6 506.6	

Result or 1/2 SDL (mercury)

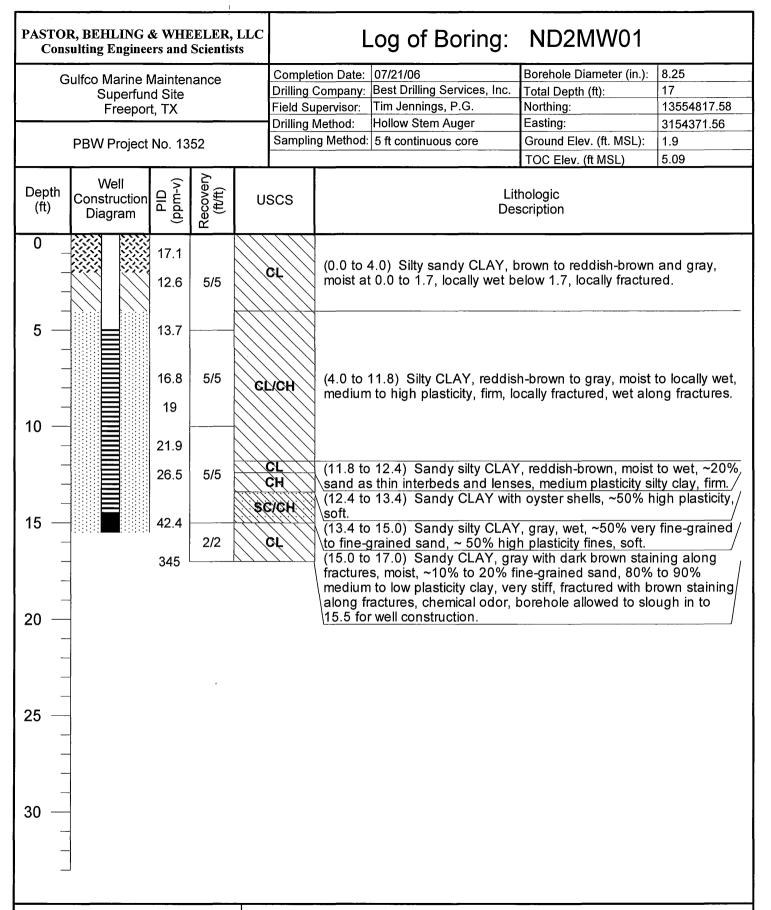
General Statistics Number of Valid Samples	10	Number of Unique Samples	8
Raw Statistics		Log-transformed Statistics	
Minimum	0.015	Minimum of Log Data	-4.2
Maximum		Maximum of Log Data	-3,507
Mean Median		Mean of log Data SD of log Data	-3.871 0.217
SD	0.0195	SD of log Data	0.217
Coefficient of Variation	0.225		
Skewness	0.734		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic		Shapiro Wilk Test Statistic	0.937
Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level	0.842	Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level	0.842
Data appear Normal at 5% digitificance Level		Data appear Lognormal at 5% digrimicance Level	
Assuming Normal Distribution	0.0044	Assuming Lognormal Distribution	0.0045
95% Student's-t UCL 95% UCLs (Adjusted for Skewness)	0.0241	95% H-UCL 95% Chebyshev (MVUE) UCL	0.0245 0.0277
95% Adjusted-CLT UCL	0.0242	97.5% Chebyshev (MVUE) UCL	0.0305
95% Modified-t UCL		99% Chebyshev (MVUE) UCL	0.0359
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	16.3	Data appear Normal at 5% Significance Level	
Theta Star	0.00131		
nu star	326.1		
Approximate Chi Square Value (.05)		Nonparametric Statistics	
Adjusted Level of Significance Adjusted Chi Square Value	0.0267	95% CLT UCL 95% Jackknife UCL	0.0238 0.0241
rajuotoa orn oqualo valuo	210.0	95% Standard Bootstrap UCL	0.0236
Anderson-Darling Test Statistic	0.458	95% Bootstrap-t UCL	0.0246
Anderson-Darling 5% Critical Value		95% Hall's Bootstrap UCL	0.024
Kolmogorov-Smirnov Test Statistic		95% Percentile Bootstrap UCL	0.0238
Kolmogorov-Smirnov 5% Critical Value Data appear Gamma Distributed at 5% Significance Level	0.266	95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL	0.0239 0.0279
Data appear Canina Distributed at 0% organicarios 2040		97.5% Chebyshev(Mean, Sd) UCL	0.0308
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.0364
95% Approximate Gamma UCL	0.0243		
95% Adjusted Gamma UCL	0.0249		
Potential UCL to Use		Use 95% Student's-t UCL	0.0241
Potential UCL to Use Result or 1/2 SDL (molybdenum)		Use 95% Student's-t UCL	0.0241
Result or 1/2 SDL (molybdenum)		Use 95% Student's-t UCL	0.0241
	10	Use 95% Student's-t UCL Number of Unique Samples	0.0241
Result or 1/2 SDL (molybdenum) General Statistics	10		
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum	0.42	Number of Unique Samples Log-transformed Statistics Minimum of Log Data	10 -0.868
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum	0.42 0.68	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data	-0.868 -0.386
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean	0.42 0.68 0.522	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data	-0.868 -0.386 -0.659
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum	0.42 0.68 0.522	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data	-0.868 -0.386
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation	0.42 0.68 0.522 0.505 0.0739 0.142	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data	-0.868 -0.386 -0.659
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD	0.42 0.68 0.522 0.505 0.0739	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data	-0.868 -0.386 -0.659
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation	0.42 0.68 0.522 0.505 0.0739 0.142	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data	-0.868 -0.386 -0.659
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test	0.42 0.68 0.522 0.505 0.0739 0.142 0.94	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test	-0.868 -0.386 -0.659 0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic	0.42 0.68 0.522 0.505 0.0739 0.142 0.94	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic	-0.868 -0.386 -0.659 0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test	0.42 0.68 0.522 0.505 0.0739 0.142 0.94	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test	-0.868 -0.386 -0.659 0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level	0.42 0.68 0.522 0.505 0.0739 0.142 0.94	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Maximum of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level	-0.868 -0.386 -0.659 0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution	0.42 0.68 0.522 0.505 0.0739 0.142 0.94	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution	-0.868 -0.386 -0.659 0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level	0.42 0.68 0.522 0.505 0.0739 0.142 0.94	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution	-0.868 -0.386 -0.659 0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL	0.42 0.68 0.522 0.505 0.0739 0.142 0.94 0.947 0.842	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL	-0.868 -0.386 -0.659 -0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness)	0.42 0.68 0.522 0.505 0.0739 0.142 0.94 0.947	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL	-0.868 -0.386 -0.659 0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL	0.42 0.68 0.522 0.505 0.0739 0.142 0.94 0.947 0.842	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL	-0.868 -0.386 -0.659 -0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected)	0.42 0.68 0.522 0.505 0.0739 0.142 0.94 0.947 0.842 0.565 0.568	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL	-0.868 -0.386 -0.659 -0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star	0.42 0.68 0.522 0.505 0.0739 0.142 0.94 0.947 0.842 0.565 0.566	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Mean of log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution	-0.868 -0.386 -0.659 -0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star	0.42 0.68 0.522 0.505 0.0739 0.142 0.94 0.947 0.842 0.565 0.568 0.566	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Mean of log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Normal at 5% Significance Level	-0.868 -0.386 -0.659 -0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05)	0.42 0.68 0.522 0.505 0.0739 0.142 0.94 0.947 0.842 0.565 0.568 0.566	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Normal at 5% Significance Level Nonparametric Statistics	-0.868 -0.386 -0.659 -0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star	0.42 0.68 0.522 0.505 0.0739 0.142 0.94 0.947 0.842 0.565 0.568 0.566 40.85 0.0128 817 751.7	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Mean of log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Normal at 5% Significance Level	0.868 -0.386 -0.659 -0.137
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Core Value	0.42 0.68 0.522 0.055 0.0739 0.142 0.94 0.947 0.842 0.565 0.568 0.566 40.85 0.0128 817 751.7 0.0267 740.8	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Normal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Standard Bootstrap UCL	0.868 -0.386 -0.659 0.137 -0.974 0.842 -0.568 0.621 0.663 0.747
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% Wodified-t UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic	0.42 0.68 0.522 0.505 0.0739 0.142 0.94 0.947 0.842 0.565 0.568 0.566 40.85 0.0267 751.7 0.0267 740.8	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Normal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Jackknife UCL 95% Bootstrap-t UCL	0.568 0.565 0.565 0.565 0.565 0.579
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Chevel of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling Test Statistic	0.42 0.68 0.522 0.505 0.0739 0.142 0.94 0.947 0.842 0.565 0.566 40.85 0.0128 817 751.7 0.0267 740.8	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Normal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Jackknife UCL 95% Standard Bootstrap UCL 95% Hall's Bootstrap UCL	0.974 0.974 0.842 0.568 0.621 0.663 0.747 0.56 0.565 0.565 0.579 0.59
Result or 1/2 SDL (molybdenum) General Statistics Number of Valid Samples Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Normal at 5% Significance Level Assuming Normal Distribution 95% Student's-t UCL 95% Wodified-t UCL 95% Modified-t UCL Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic	0.42 0.68 0.522 0.505 0.0739 0.142 0.94 0.947 0.842 0.565 0.568 0.566 40.85 0.0267 751.7 0.0267 740.8	Number of Unique Samples Log-transformed Statistics Minimum of Log Data Maximum of Log Data Mean of log Data SD of log Data SD of log Data Lognormal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data appear Lognormal at 5% Significance Level Assuming Lognormal Distribution 95% H-UCL 95% Chebyshev (MVUE) UCL 97.5% Chebyshev (MVUE) UCL 99% Chebyshev (MVUE) UCL Data Distribution Data appear Normal at 5% Significance Level Nonparametric Statistics 95% CLT UCL 95% Jackknife UCL 95% Bootstrap-t UCL	0.568 0.565 0.565 0.565 0.565 0.579

Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.624	
		97.5% Chebyshev(Mean, Sd) UCL	0.668	
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.755	
95% Approximate Gamma UCL	0,567			
95% Adjusted Gamma UCL	0.576			
Detectable to the		H 050/ 04-d11-4 H01	0.505	
Potential UCL to Use		Use 95% Student's-t UCL	0,565	
Result or 1/2 SDL (phenanthrene)				
Conoral Statistics				
General Statistics Number of Valid Samples	10	Number of Unique Samples	10	
rambor of valid outliples	, ,	Mattheor of Offique outriples	,,,	
Raw Statistics		Log-transformed Statistics		
Minimum	0.00286	Minimum of Log Data	-5.859	
Maximum		Maximum of Log Data	-1.988	
Mean		Mean of log Data	-5.327	
Median		SD of log Data	1.179	
SD Coefficient of Variation	0.0423 2.525		,	
Skewness	3.162			
	0.102			
Relevant UCL Statistics				•
Normal Distribution Test		Lognormal Distribution Test		
Shapiro Wilk Test Statistic		Shapiro Wilk Test Statistic	0,459	
Shapiro Wilk Critical Value	0.842	Shapiro Wilk Critical Value	0.842	
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level		
Assuming Normal Distribution		Assuming Lognormal Distribution		
95% Student's-t UCL	0,0412	95% H-UCL	0.0383	
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0239	
95% Adjusted-CLT UCL		97.5% Chebyshev (MVUE) UCL	0.0304	
95% Modified-t UCL	0.0435	99% Chebyshev (MVUE) UCL	0.0432	
O Bistilia dia Tand		Data Distribution		
Gamma Distribution Test k star (bias corrected)	0.425	Data Distribution Data do not follow a Discernable Distribution (0.05)		
Theta Star	0.0394			
nu star	8,497			
Approximate Chi Square Value (.05)		Nonparametric Statistics		
Adjusted Level of Significance	0.0267		0.0387	
Adjusted Chi Square Value	2,487	95% Jackknife UCL	0.0412	
		95% Standard Bootstrap UCL	0.0378	
Anderson-Darling Test Statistic	3.041		1.724	
Anderson-Darling 5% Critical Value	0.776		0.748	
Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value	0.53 0.281	•	0.0434 0.0568	
Data not Gamma Distributed at 5% Significance Level	0,201	95% Chebyshev(Mean, Sd) UCL	0.075	
Data for Califina Distributed at 0 % digitification Ester		97.5% Chebyshev(Mean, Sd) UCL	0.1	
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.15	
95% Approximate Gamma UCL	0,047			
95% Adjusted Gamma UCL	0.0572			
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	0.15	
Recommended UCL exceeds the maximum observation		, , , , , , , , , , , , , , , , , , , ,		
Popult or 1/2 SDL (pyropa)				
Result or 1/2 SDL (pyrene)				
General Statistics				
Number of Valid Samples	10	Number of Unique Samples	7	
5 0 0 0				
Raw Statistics		Log-transformed Statistics	4 700	
Minimum		Minimum of Log Data	-4.768 2.064	
Maximum Mean		Maximum of Log Data	-2.064 -4.347	
Median		Mean of log Data SD of log Data	-4.347 0.811	
SD ·	0.01		0.011	
Coefficient of Variation	1.696			
Skewness	3.156			
-				
Relevant UCL Statistics		Language Distribution Tax		
Normal Distribution Test	0.300	Lognormal Distribution Test Shapiro Wilk Test Statistic	0.501	
Shapiro Wilk Test Statistic Shapiro Wilk Critical Value		Shapiro Wilk Test Statistic Shapiro Wilk Critical Value	0.842	
Data not Normal at 5% Significance Level	. 0,042	Data not Lognormal at 5% Significance Level	5.072	
		-		
Assuming Normal Distribution		Assuming Lognormal Distribution		
95% Student's-t UCL	0.0432	95% H-UCL	0.0376	
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0373	
95% Adjusted-CLT UCL		97.5% Chebyshev (MVUE) UCL	0.046	
95% Modified-t UCL	0.0452	99% Chebyshev (MVUE) UCL	0.063	
Gamma Distribution Test		Data Distribution		
k star (bias corrected)	0.834	Data do not follow a Discernable Distribution (0.05)		
Theta Star	0.0262			

nu star Approximate Chi Square Value (.05) Adjusted Level of Significance Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data not Gamma Distributed at 5% Significance Level Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL	16.67 8.437 Nonparametric Statistics 0.0267 95% CLT UCL 7.441 95% Jackknife UCL 95% Standard Bootstrap UCL 2.722 95% Bootstrap-t UCL 0.747 95% Hall's Bootstrap UCL 0.493 95% Percentile Bootstrap UCL 0.273 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 99% Chebyshev(Mean, Sd) UCL 0.0431 0.0488	0.041 0.0432 0.0404 0.464 0.239 0.0452 0.0564 0.0728 0.0948 0.138
Potential UCL to Use	Use 95% Chebyshev (Mean, Sd) UCL	0.0728
Result or 1/2 SDL (zinc) General Statistics		
Number of Valid Samples	10 Number of Unique Samples	10
Raw Statistics Minimum Maximum Mean Median SD Coefficient of Variation Skewness	Log-transformed Statistics 36.6 Minimum of Log Data 969 Maximum of Log Data 247 Mean of log Data 75.5 SD of log Data 364.6 1.476 1.694	3.6 6.876 4.667 1.272
Relevant UCL Statistics Normal Distribution Test Shapiro Wilk Test Statistic Shapiro Wilk Critical Value Data not Normal at 5% Significance Level	Lognormal Distribution Test 0.62 Shapiro Wilk Test Statistic 0.842 Shapiro Wilk Critical Value Data not Lognormal at 5% Significance Level	0.795 0.842
Assuming Normal Distribution 95% Student's-t UCL 95% UCLs (Adjusted for Skewness) 95% Adjusted-CLT UCL 95% Modified-t UCL	Assuming Lognormal Distribution 458.3 95% H-UCL 95% Chebyshev (MVUE) UCL 502.6 97.5% Chebyshev (MVUE) UCL 468.6 99% Chebyshev (MVUE) UCL	1141 602.7 772.1 1105
Gamma Distribution Test k star (bias corrected) Theta Star nu star Approximate Chi Square Value (.05) Adjusted Level of Significance	Data Distribution 0.567 Data do not follow a Discernable Distribution (0.05) 435.3 11.35 4.8 Nonparametric Statistics 0.0267 95% CLT UCL	436.6
Adjusted Chi Square Value Anderson-Darling Test Statistic Anderson-Darling 5% Critical Value Kolmogorov-Smirnov Test Statistic Kolmogorov-Smirnov 5% Critical Value Data not Gamma Distributed at 5% Significance Level	4.085 95% Jackknife UCL 95% Standard Bootstrap UCL 1.247 95% Bootstrap-t UCL 0.76 95% Hall's Bootstrap UCL 0.346 95% Percentile Bootstrap UCL 0.277 95% BCA Bootstrap UCL 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL	458.3 426.1 1346 1691 430.3 496.4 749.5 967 1394
Assuming Gamma Distribution 95% Approximate Gamma UCL 95% Adjusted Gamma UCL Potential UCL to Use	99% Chebyshev(Mean, Sd) UCL 583.8 685.9 Use 99% Chebyshev (Mean, Sd) UCL	1394
Recommended UCL exceeds the maximum observation	2-1 3010 0.102/31.01 (1.1021.1) 0-1/ 0-2	

APPENDIX D

SOIL BORING LOGS



Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Well Materials

(0.0 to 5.0) Casing, 2" sch. 40 PVC (5.0 to 15.0) Screen, 2" sch. 40 PVC, 0.01 slot (15.0 to 15.5) End Cap

Annular Materials

(0.0 to 2.0) Portland Cement with ~ 5% bentonite gel (2.0 to 4.0) Bentonite chips, 3/8" (4.0 to 15.5) Sand, 20/40 silica

PASTOR, BEHLING & WHEELER, LLC ND3MW02 Log of Boring: **Consulting Engineers and Scientists** Completion Date: 07/17/06 Borehole Diameter (in.): 8.25 **Gulfco Marine Maintenance** Drilling Company: Best Drilling Services, Inc. 22 Total Depth (ft): Superfund Site 13554692.51 Tim Jennings, P.G. Northing: Freeport, TX Field Supervisor: Drilling Method: Hollow Stem Auger Easting: 3154679.33 Sampling Method: 5 ft continuous core Ground Elev. (ft. MSL): PBW Project No. 1352 3.7 6.41 TOC Elev. (ft MSL) Recovery Well Depth (#/#) Lithologic Construction **USCS** (ft) Description Diagram (0.0 to 0.5) Sandy CLAY, brown, moist, ~ 30% to 40% fine-grained 0 sand, ~ 60% to 70% medium plasticity clay, firm. 1.5/1.5 16.4 (0.5 to 2.0) Sandy CLAY as above, trace black mottling at 2.2, decrease in sand content below 2.0. 14 5/5 (2.0 to 7.5) Sandy CLAY as above with local fractures, wet. 9.5 6.8 5/5 0.7 (7.5 to 11.5) Sandy CLAY, brown, wet, ~ 20% to 50% fine-grained CLISP sand, ~ 50% to 80% high plasticity clay. 10 5.4 (11.5 to 14.6) Clayey silty SAND, brown, wet, ~ 30% to 50% 5/5 7.4 SC/SM medium plasticity fines, ~ 50% to 70% very fine to fine-grained sand, very soft. 15 6.1 9.9 (14.6 to 21.1) Poorly graded SAND, brown, wet, visible NAPL at 21.0 5/5 to 21.1 on top of clay, very fine to fine-grained sand, silt locally, soft, running sand. 315 20 1.5/1.5 1755 (21.1 to 21.5) Sandy CLAY, brown, moist, ~ 10% fine-grained sand, ~ 90% high plasticity clay, firm, borehole drilled to 22.0 for well construction. 25 30 Well Materials Annular Materials

PBW

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446 (0.0 to 11.5) Casing, 2" sch. 40 PVC (11.5 to 21.5) Screen, 2" sch. 40 PVC, 0.01 slot (21.5 to 22.0) End Cap (0.0 to 5.0) Portland Cement with ~ 5% bentonite gel (5.0 to 8.0) Bentonite chips, 3/8" (8.0 to 22.0) Sand, 20/40 silica

PASTOR, BEHLING & WHEELER, LLC Log of Boring: ND4MW03 **Consulting Engineers and Scientists** Completion Date: 07/17/06 Borehole Diameter (in.): 8.25 Gulfco Marine Maintenance Drilling Company: Best Drilling Services, Inc. 20 Total Depth (ft): Superfund Site Tim Jennings, P.G. Field Supervisor: Northing: 13554562.67 Freeport, TX **Drilling Method:** Hollow Stem Auger Easting: 3154758.06 Sampling Method: 5 ft continuous core Ground Elev. (ft. MSL): 3.2 PBW Project No. 1352 6.2 TOC Elev. (ft MSL) Recovery (ft/ft) PID (ppm-v) Well Depth Lithologic Construction **USCS** (ft) Description Diagram 0.5/0.5 (0.0 to 0.2) Silty SAND, light brown, moist, very fine-grained sand, 0 0.9 1.5/1.5 (0.2 to 0.6) Sandy CLAY, dark brown, moist, ~ 20% very fine-grained sand, ~ 80% medium plasticity clay, slightly firm. 5/5 (0.6 to 2.0) Sandy CLAY, dark brown, becomes black below 1.5. 1.6 (2.0 to 4.2) Sandy CLAY, locally black and dark reddish-brown, 5 becomes highly plastic below ~ 3.0. CL 1.9 (4.2 to 8.2) Sandy CLAY as above, reddish-brown, moist, wet below 5.9, with thin sand interbeds locally. 5/5 1.7 (8.2 to 10.4) Sandy CLAY, brown, wet, ~ 40 very fine-grained sand, ~ 60% highly plastic clay, soft. 10 0.8 5/5 2.4 (10.4 to 15.6) Poorly graded SAND with clayey sand, brown, wet, SP/SC ~80% fine-grained sand, ~ 20% high plasticity clay, very soft. 2.1 15 (15.6 to 17.0) Poorly graded SAND and sandy CLAY, brown, wet, CLYSP 2.9 ~50% very fine-grained sand, ~ 50% high plasticity clay, very soft. 5/5 (17.0 to 20.0) Sandy CLAY, brown to grayish brown, wet, <5% НJ fine-grained sand, ~95% high plasticity CLAY, soft, borehole allowed 3.4 to slough to 18.0 for well construction. 20 25 30

PBW

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Well Materials

(0.0 to 7.5) Casing, 2" sch. 40 PVC (7.5 to 17.5) Screen, 2" sch. 40 PVC, 0.01 slot (17.5 to 18.0) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with ~ 5% bentonite gel (3.0 to 5.0) Bentonite chips, 3/8" (5.0 to 18.0) Sand, 20/40 silica

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists						L	og of	Boring:	NE1MW04	4
G	Gulfco Marine N Superfun Freepor	d Site	nance		Drilling (Field Su	Company: pervisor:	Tim Jenning		Borehole Diameter (ir Total Depth (ft): Northing:	17 13555097.66
	PBW Project	No. 13	52		Drilling I Samplin		Hollow Sten		Easting: Ground Elev. (ft. MSL TOC Elev. (ft MSL)	3154385.63 2.1 4.9
Depth (ft)	Well Construction Diagram	PID (ppm-v)	Recovery (ft/ft)	Ų:	scs				hologic scription	
0 _ - - - 5 —		19 28.2	5/5		CL	(0.0 to to 20% clay, ve	fine-graine	/ CLAY, dark d sand, ~ 80	gray to reddish-brov % to 90% medium to	vn, moist, ~ 10% o low plasticity
5 — - -		20.9	5/5			(5.0 to fine-grasoft.	8.2) Sandy ined sand	silty CLAY, ç and silt, 60%	gray to brown, wet, - - 80% medium to hi	~ 20% to 40% gh plasticity clay,
- 10 —		1.1		SI	A/SC				brown to gray, wet, ry fine-grained to fin	
- - -		0.7	4.5/5		ZH	(10.0 to	silt and vei	y sandy CLA\ y fine-grained ter shells at 1	/, reddish-brown to g d sand, ~ 60% to 80 1.8 to 12.2.	gray, wet, ~ 20% % high plasticity
15 — - -			2/2		Cr	~ 30% \plasticit	fine-grained y clay, very	d sand, ~ 20% fractured.	carbonate nodules	s, ~ 50% medium
20 — - - - -						(16.5 to	o 17.0) Sar nedium pla:	ndy CLAY, br sticity clay, ve	own, moist, ~ 10% fi ry stiff, first confining	ne-sand, ~ 90%/ g clay.
25 — - - -										
30 — - - -										

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Well Materials

(0.0 to 6.5) Casing, 2" sch. 40 PVC (6.5 to 16.5) Screen, 2" sch. 40 PVC, 0.01 slot (16.5 to 17.0) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with ~ 5% bentonite gel (3.0 to 5.0) Bentonite chips, 3/8" (5.0 to 17.0) Sand, 20/40 silica

	ulfco Ma	orino A	/ainta-	onco	Comi	oletion Date:	07/21/06	Borehole Diameter (in.):	8.25
G		erfun		lance	Drillin	g Company:	Best Drilling Services, Inc.	Total Depth (ft):	22
		eepor				Supervisor:	Tim Jennings, P.G.	Northing:	13554868.05
_	•••	ооро.	., ., .			g Method:	Hollow Stem Auger	Easting:	3154789.25
	PBW P	roject	No 13	52		oling Method:		Ground Elev. (ft. MSL):	3.3
	1 5001	- Ojcol	140. 10					TOC Elev. (ft MSL)	6.53
epth (ft)	We Constru Diagr	uction	PID (ppm-v)	Recovery (ft/ft)	USCS			thologic escription	
0 _			0		XX SP(CLX		0.6) SAND and CLAY,		edium plastic
_						(0.6 to	% medium-grained san 2.3) Sandy CLAY, brow	u. vn. wet ~ 30% fine to co	parse-graine
			0	4/5	(cr	∖∖sand. ~	70% medium plasticity	clavs, verv soft.	•
_	\mathcal{N}				77777	(2.3 to)	3.7) Silty sandy CLAY,	gray to black, moist, ~ 1	0% to 20%
_					· :: :: :	and fine	e-grained sand, ~ 80% t	o 90% medium plasticit	y clay, firm.
5 —			0.4				40.0\ 0:16.0AND b	4 000/ t- 400/ fir	000/
_			• • •				10.0) Silty SAND, brown ry fine to fine-grained sa		
_				1/5	SM :		oundwater in reducing e		
				1/5			ausing poor recovery, la		
_							ulled–likely reason for p		Ū
o —						· ·			
_			0			·:			
			_			∴ (10.0 to	15.0) Silty clayey SAN	D brown wet. ~ 40% to	50%
			0	3/5	SM/SC	medium	to high plasticity fines,	~ 50% to 60% very fine	to
_							ined sand.	·	
_						; <u>·</u>			
5 —					<i>XXXXXXXX</i>	(15 0 to	16.5) Silty clayey SAN	D as above with thin int	terhedded
_			0		SCICL		ocally, due to poor recov		
_			ĺ				ng" clay interpreted at ~		
_		///		3/5		.¹ \below ~	16.5.		
	////	///					20.0) Poorly graded S		, wet, very fi
0 —		///			SP.	់ to fine-ឲ្	grained sand, very "sou	oy."	
J —			[0.10			22.0) Poorly graded S/	AND, brown, wet, very fi	ne to
		///	_	2/2			-grained sand.		
_	` ` `	\ \ \ \	0 ι			Notes:	racarban lika shaan an i	vator in barabala, but n	o viciblo
_	1						rocarbon-like sheen on v al or hydrocarbon obser		
_	1					(3.7577700		acany aopti	
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Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Well Materials

(0.0 to 5.5) Casing, 2" sch. 40 PVC (5.5 to 15.5) Screen, 2" sch. 40 PVC, 0.01 slot (15.5 to 16.0) End Cap

Annular Materials

(0.0 to 2.0) Portland Cement with ~ 5% bentonite gel (2.0 to 4.0) Bentonite chips, 3/8" (4.0 to 16.0) Sand, 20/40 silica (16.0 to 22.0) Bentonite chips, 3/8"

PASTOR, BEHLING & WHEELER, LLC Log of Boring: NF2MW06 **Consulting Engineers and Scientists** Completion Date: 07/31/06 Borehole Diameter (in.): 8.25 Gulfco Marine Maintenance Drilling Company: Best Drilling Services, Inc. Total Depth (ft): 20 Superfund Site Tim Jennings, P.G. Field Supervisor: Northing: 13555117.77 Freeport, TX **Drilling Method:** Hollow Stem Auger Easting: 3154650.46 Sampling Method: 5 ft continuous core Ground Elev. (ft. MSL): 2.2 PBW Project No. 1352 5.35 TOC Elev. (ft MSL) Recovery (ft/ft) Well (v-mdd Depth Lithologic Construction USCS (ft) Description Diagram (0.0 to 0.7) Sandy CLAY, brown, moist, ~ 20% fine-grained sand, ~ 3.4 80% medium plasticity clay, firm, abundant roots. 4/4 ŒĽ 3.5 (0.7 to 5.2) Silty CLAY, gray to brown, moist, medium plasticity, firm. 5 3.1 4/4 (5.2 to 9.8) Silty sandy CLAY and clayey silty SAND, gray to brown, 2.8 CL/SM/SC wet, ~ 40% to 50% very fine-grained sand, ~ 50% to 60% medium plasticity clay and silt, soft to slightly firm. 2.8 10 4/4 4.1 (9.8 to 13.9) Poorly graded SAND and silty SAND, brown, wet, ~ 20% SP/SM to 30% low plasticity fines, ~ 70% to 80% very fine to fine-grained 4.7 4/4 $\mathcal{H}\mathcal{J}$ (13.9 to 14.5) Silty CLAY, brown, moist to wet, high plasticity fines, 15 5.6 very soft. SP/SM (14.5 to 16.3) Silty SAND and poorly graded SAND, brown, gray 6.1 below 15.6, very fine to fine-grained sand with ~ 10% to 20% silt above 15.6, moderate chemical odor where gray. 4/4 (16.3 to 17.9) Sandy CLAY, reddish-brown, moist (wet on thin sand 6.3 interbeds), ~ 80% to 90% high plasticity clay, soft, firm at 17.2 to 17.9 (17.9 to 20.0) Poorly graded sand, brown, wet, very fine to 20 fine-grained sand, soft. 25 30

PBW

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Well Materials

(0.0 to 6.0) Casing, 2" sch. 40 PVC (6.0 to 16.0) Screen, 2" sch. 40 PVC, 0.01 slot (16.0 to 16.5) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with ~ 5% bentonite gel (3.0 to 5.0) Bentonite chips, 3/8" (5.0 to 16.5.0) Sand, 20/40 silica

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists						L	og of	Boring:	SB4MW07			
G	Gulfco Marine I Superfur Freepoi	nd Site	nance		Drilling Field Su	etion Date: Company: upervisor:	Best Drilling Tim Jennin		Borehole Diameter (in.): Total Depth (ft): Northing:	8.25 20 13554065.21		
	PBW Project	52			Method: ng Method:	Hollow Ster 5 ft continu		Easting: Ground Elev. (ft. MSL): TOC Elev. (ft MSL)	3154818.19 4.6 7.57			
Depth (ft)	Well Construction Diagram		Recovery (ft/ft)		scs		Lithologic Description					
0 _		1.3 153	4/5		FjII				and clay, black-stained te hydrocarbon odor.	i sand and		
5 — — — — —		7.9 5.9	5/5		<u>cr</u>			Y, reddish-bro below ~ 10.0	wn to gray, moist, med	lium plasticity,		
		5.2 6.1 8.1	5/5		CH	(11.0 tc	18.9) Silt	y sandy CLAY	′, gray to brown, wet, ~	· 10 to 20 %		
- -		1.8	5/5		CL	(18.9 to	20.0) Silt	y CLAY, gray,	% high plasticity clay, s			
20 — - - -		'				and silt	very stiff,	first confining	layer.	/		
25 — - - -												
30 —												

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Well Materials

(0.0 to 9.5) Casing, 2" sch. 40 PVC (9.5 to 19.5) Screen, 2" sch. 40 PVC, 0.01 slot (19.5 to 20.0) End Cap

Annular Materials

(0.0 to 6.0) Portland Cement with \sim 5% bentonite gel (6.0 to 8.0) Bentonite chips, 3/8" (8.0 to 20.0) Sand, 20/40 silica

PASTOR, BEHLING & WHEELER, LLC SE1MW08 Log of Boring: **Consulting Engineers and Scientists** Completion Date: 07/19/06 Borehole Diameter (in.): 8.25 Gulfco Marine Maintenance Drilling Company: Best Drilling Services, Inc. 20 Total Depth (ft): Superfund Site Tim Jennings, P.G. 13554391.06 Field Supervisor: Northing: Freeport, TX **Drilling Method:** Hollow Stem Auger Easting: 3154820.14 Sampling Method: 5 ft continuous core Ground Elev. (ft. MSL): 4.4 PBW Project No. 1352 TOC Elev. (ft MSL) 7.54 Recovery (ft/ft) PID (ppm-v) Well Depth Lithologic Construction **USCS** (ft) Description Diagram 0 Fill (0.0 to 0.8) FILL, sand, gravel, and clay, hard. 5 5/5 3.4 (0.8 to 8.4) Sandy CLAY, brown to reddish-brown, moist, ~ 20% 0.3 CL) fine-grained sand and carbonate nodules, ~ 80% medium plasticity 5 clay, firm to stiff, possible fill at 0.8 to 4.0. 3.3 5/5 2.7 (8.4 to 11.7) Silty clayey SAND, brown to gray, moist, wet below ~ 10 SM/SP 9.0, ~ 50% high plasticity fines, ~ 50% very fine to fine-grained sand. soft. 2.3 5/5 1.3 (11.7 to 16.6) Silty SAND, brown, wet, ~20% to 30% fines, ~ 70% to SM 80% very fine to fine-grained sand, soft. 15 3 (16.6 to 18.6) Silty Clayey SAND, brown, wet, ~ 50% high plasticity 3.5 5/5 SM/SP fines, ~ 50% fine-grained sand, soft. (18.6 to 20.0) Silty CLAY, brown to dark grayish-brown, moist, high 1.9 ĊΉ plasticity fines, firm, first confining clay. 20 25 30

PBW

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Well Materials

(0.0 to 8.5) Casing, 2" sch. 40 PVC (8.5 to 18.5) Screen, 2" sch. 40 PVC, 0.01 slot (18.5 to 19.0) End Cap

Annular Materials

(0.0 to 4.0) Portland Cement with \sim 5% bentonite gel (4.0 to 6.5) Bentonite chips, 3/8" (6.5 to 20.0) Sand, 20/40 silica

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists					Log of Boring: SE6MW09							
G	Sulfco Marine I Superfun Freepor	d Site	nance	·	Drilling Field Su	tion Date: Company: pervisor:	Tim Jenn	ng Service		Borehole Diameter (in.): Total Depth (ft): Northing:	20 13554149.98	
	PBW Project		Method: ng Method:	 	em Auger nuous core		Easting: Ground Elev. (ft. MSL): TOC Elev. (ft MSL)	3155180.49 4.7 7.66				
Depth (ft)	Well Construction Diagram	(v-mdd)	Recovery (ft/ft)	U	scs	Lithologic Description						
0 _		2.8	/-		* jur//		(0.0 to 2.4) FILL, sand, gravel, and clay, brown, moist to dry, very hard, abundant roots.				t to dry, very	
- - 5		20.1	3.5/5		SP.		(2.4 to 5.2) Poorly graded SAND, dark brown, moist, trace black staining at 2.4 to 2.6, fine-grained sand, soft.					
- - - -		6.3 1.5 1.7	5/5	5/5	cr	(5.2 to 9.5) Silty CLAY, brown, moist, medium plasticity fines, stiff, increased moisture and softer below 8.0.					ty fines, stiff,	
10 — - - -		1.9			n/sc	(9.5 to 13.0) Silty clayey SAND, brown, wet, ~ 40 to 50% high plasticity fines, ~ 50% to 60% very fine to fine-grained sand, soft.						
15 — -		1.8 1.8			SM	wet, ~ 2		0% high	plasticit	y graded sand, interb y fines, ~ 60% to 80%		
20 —		2.21.5	5/5	,	NSC CL	fines, ~ (19.4 to	(17.9 to 19.4) Silty clayey SAND, brown, wet, ~ 50% high plasticit fines, ~ 50% very fine to fine-grained sand and sand interbeds, so (19.4 to 20.0) Silty CLAY, grayish-brown, moist, high plasticity fine very firm.				interbeds, soft.	
- - -												
25 — — — —												
30 —												

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Well Materials

(0.0 to 9.5) Casing, 2" sch. 40 PVC (9.5 to 19.5) Screen, 2" sch. 40 PVC, 0.01 slot (19.5 to 20.0) End Cap

Annular Materials

(0.0 to 6.0) Portland Cement with ~ 5% bentonite gel (6.0 to 7.9) Bentonite chips, 3/8" (7.9 to 20.0) Sand, 20/40 silica

	sulting Enginee	. s anu	- CICHUS		Log of Boring:		4
G	Gulfco Marine N	/ lainter	nance		pletion Date: 07/20/06	Borehole Diameter (in.):	8.25
	Superfun				ng Company: Best Drilling Services, Inc.	Total Depth (ft):	20
	Freepor	t, TX			Supervisor: Tim Jennings, P.G.	Northing:	13554284.4
					ng Method: Hollow Stem Auger	Easting:	3155154.1
	PBW Project	No. 13	52	Sam	pling Method: 5 ft continuous core	Ground Elev. (ft. MSL):	5
	<u> </u>					TOC Elev. (ft MSL)	8.01
Depth (ft)	Well Construction Diagram	PID (ppm-v)	Recovery (ft/ft)	USCS		ithologic escription	
0				SM/SC	(0.0 to 1.3) Silty clayey SAND,		w plasticity
_		4 -			fines, ~ 50% fine-grained sand		,
		1.5	4/5	cr	(1.3 to 2.5) Silty CLAY, brown		
		2.4		SM	(2.5 to 5.0) Silty SAND, brown fines, ~ 60% fine-grained sand hydrocarbon odor.		
5 —		1.5			(5.0 to 8.6) Silty sandy CLAY,	reddish brown, moist, ~	10% to 20%
		1.7	5/5	CL	fine-grained sand and silt, ~ 80 firm, stiff.	% to 90% medium plas	ticity clay,
_ 10 —		1.7		SM/SC	∴ (8.6 to 10.5) Silty clayey SANE∴ fines, ~ 50% very fine-grained		nigh plasticity
- - - 15		1.7 1.5 1.4	5/5	SM/MH/C	(10.5 to 15.0) Interbedded silt SAND, brown, wet, ~40% to 60 40 to 60% very fine-grained sa	% high plasticity fines a	nd silty clayey s interbeds,
10		1.4	5/5	SM	(15.0 to 18.2) Silty SAND, brow ~60% very fine to fine-grained		plasticity silt,
				H	(18.2 to 20.0) Silty CLAY, gray soft, first confining clay.	rish-brown, moist, high p	lasticity fines

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Well Materials

(0.0 to 9.0) Casing, 2" sch. 40 PVC (9.0 to 19.0) Screen, 2" sch. 40 PVC, 0.01 slot (19.0 to 19.5) End Cap

Annular Materials

(0.0 to 5.0) Portland Cement with \sim 5% bentonite gel (5.0 to 7.0) Bentonite chips, 3/8" (7.0 to 20.0) Sand, 20/40 silica

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists						Log of Boring:	SF6MW11						
G	ulfco Marine I Superfun Freepor	d Site	nance		Drilling Field Sι	tion Date: 07/20/06 Company: Best Drilling Services, Inc. upervisor: Tim Jennings, P.G.	Borehole Diameter (in.): Total Depth (ft): Northing:	8.25 20 13554215.04					
	PBW Project	No. 13	52			Method: Hollow Stem Auger ng Method: 5 ft continuous core	Easting: Ground Elev. (ft. MSL): TOC Elev. (ft MSL)	3155265.88 5 8.11					
Depth (ft)	Well Construction Diagram	PID (ppm-v)	Recovery (ft/ft)	U	scs		Lithologic Description						
0		0.1 1.6 1.5	3/5		=	(0.0 to 2.5) FILL, sandy clay with gravel and oyster shells, dark brown, moist, ~ 20% to 30% fine-grained sand, moist, ~ 20% to 30% fine-grained sand, ~ 15% gravel and oyster shells, ~ 70% to 80% low plasticity clay, very stiff.							
5 —		1.6 1.4	5/5	CL		(2.5 to 9.5) Silty CLAY, grayish-brown, moist, ~10% silt and very fine-grained sand, ~ 90% medium plasticity clay, very stiff, firm below 8.5, few oyster shell fragments and carbonate nodules.							
10 — - - -		1.9	5/5	CI	/SC	(9.5 to 13.3) Sandy silty CLAY a fine to fine-grained sand, a few fines, soft.							
15 — -		2 2 1.8	5/5		SM	(13.3 to 18.0) Silty SAND, browr 70% very fine to fine-grained sa		nes, ~ 60% to					
20 —					CF	(18.0 to 20.0) Silty sandy CLAY, brown, moist, ~ 10% to 20% fine-grained sand and silt, ~ 80% to 90% medium plasticity clay, firm.							
25 —													
30 —													

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Well Materials

(0.0 to 8.0) Casing, 2" sch. 40 PVC (8.0 to 18.0) Screen, 2" sch. 40 PVC, 0.01 slot (18.0 to 18.5) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with ~ 5% bentonite gel (.0 to 5.0) Bentonite chips, 3/8" (5.0 to 20.0) Sand, 20/40 silica

G	ulfco Marine I	Mainter	nance		Comple	tion Date:	07/20/06		Borehole Diameter (in.):	8.25
_	Superfun		ianoo		Drilling	Company:	Best Drilling Se		Total Depth (ft):	20
	Freepor				Field Su	ıpervisor:	Tim Jennings,		Northing:	13554105.36
						Method:	Hollow Stem A		Easting:	3155304.07
	PBW Project	No. 13	52		Samplir	ng Method:	5 ft continuous	core	Ground Elev. (ft. MSL):	4.7
									TOC Elev. (ft MSL)	7.96
epth (ft)	Well Construction Diagram		Recovery (ft/ft)	U	SCS				nologic cription	
0 _		1.5					1.0) FILL, po ined sand.	orly graded	SAND, brown, moist, v	very fine to
- -		21.4	4/5		₹jII				avel and shells, stiff, da or locally near 2.0 to 3	
5 — - - - 0 —		2.6	2.5/5		2		ry fine-graine		dark brown to gray, mo silt, ~ 90% to 95% me	
 		1.9	5/5	SN	NSC	brown,	wet, ~ 30% hi	gh plasticity	ayey SAND, grayish-b clay as clayey sand ir y fine to fine-grained s	nterbeds, ~
5 —		1.9								
		1.7	5/5		SP .	plasticit	y fineś, > 90%	very fine to	ND with silt, brown, we o fine-grained sand, ve	ery soft.
0 —		1.8		1.4.6.4	M/SC:	(18.0 to 19.0) Interbedded, poorly graded SAND and silty clayey SAND, brown, wet, ~ 50% low plasticity fines, ~ 50% very fine to fine-grained sand, soft. (19.0 to 20.0) Silty CLAY, grayish-brown, moist, high plasticity fines				
_							n, first confinir		sn-brown, moist, nigh p	lasticity fines
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Well Materials

(0.0 to 8.5) Casing, 2" sch. 40 PVC (8.5 to 18.5) Screen, 2" sch. 40 PVC, 0.01 slot (18.5 to 19.0) End Cap

Annular Materials

(0.0 to 5.0) Portland Cement with \sim 5% bentonite gel (5.0 to 7.0) Bentonite chips, 3/8" (7.0 to 20.0) Sand, 20/40 silica

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists						L	og of	Boring:	SG2MW13			
G	Gulfco Marine I Superfun Freepor	nd Site	nance		Drilling (Field Su	ction Date: Company: upervisor:	07/19/06 Best Drillin Tim Jennin Hollow Ste	 	Borehole Diameter (in.): Total Depth (ft): Northing: Easting:	8.25 22 13554472.65		
	PBW Project	No. 13	352			Method: ng Method:	5 ft continu		Ground Elev. (ft. MSL): TOC Elev. (ft MSL)	3155012.01 4.5 7.71		
Depth (ft)	Well Construction Diagram	(v-mdd)	Recovery (ft/ft)	US	SCS	Lithologic Description						
0_		1.4			TIL /	(0.0 TO	2.1) FILL	, sand, grave	l, and clay, firm, soft.			
_		11.1	3.5/5		SP.	(2.1 to	3.0) FILL,	sand, brown,	moist.			
5 — - - -		3.4	5/5	C4	JCH	to 30%	(3.0 to 11.2) Sandy silty CLAY, reddish-brown to gray, moist, ~ 20% to 30% fine-grained sand and silt, ~ 70% to 80% medium to high plasticity clay, firm.					
10 —		5.8	5.8									
- - - 15 —		4.9	5/5	SP/SM/CL		(11.2 to 16.0) Interbedded SAND, silty SAND, and sandy CLAY, brown, wet, ~ 50% to 60% poorly graded fine-grained sand interbeds (0.5 inches thick), locally very silty, ~ 40% to 50% high plasticity clay as interbeds.						
- -		5.3 5.3 3.2 4.4	5/5		H		(16.0 to 18.2) CLAY, reddish-brown to brown, moist, high plasticity clay, first confining clay.					
_				CHIS	PISC	(18.2 to	20.0) CL/	AY as above, ells) interbeds	e, with ~ 45% shell-derived sand ds, bronw, wet.			
20 —		5.2	2/2		3P.			-	ID, brown, fine to coars	e-grained, wet.		
25 — -				1	•							
30 —												

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Well Materials

(0.0 to 6.0) Casing, 2" sch. 40 PVC (6.0 to 16.0) Screen, 2" sch. 40 PVC, 0.01 slot (16.0 to 16.5) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with ~ 5% bentonite gel (3.0 to 5.0) Bentonite chips, 3/8" (5.0 to 17.0) Sand, 20/40 silica (17.0 to 20.0) Bentonite chips, 3/8"

	R, BEHLING of sulting Engine				L	og of Boring:	SH7MW14				
G	Gulfco Marine I Superfun Freepor	d Site	nance	Drilling Field S	etion Date: Company: upervisor: Method:	07/19/06 Best Drilling Services, Inc. Tim Jennings, P.G. Hollow Stem Auger	Borehole Diameter (in.): Total Depth (ft): Northing: Easting:	8.25 22 13554264.46 3155446.95			
	PBW Project	No. 13	52			5 ft continuous core	Ground Elev. (ft. MSL): TOC Elev. (ft MSL)	5.2			
Depth (ft)	Well Construction Diagram		USCS		Lithologic Description						
0 _				Fill	(0.0 to	1.0) SAND and GRAVE aterial.	L, very poor recovery, v	very hard road			
- - - 5 —			0.5/5								
- -		11.7	5/5	Cr		11.4) Sandy CLAY, gra ined sand, ~ 80% to 90					
10 —		10.8									
_ _ 		10.7 11.9	5/5	SP	(11.4 to 13.0) Poorly graded SAND, brown, wet, very fine-grained to fine-grained, soft.						
_ 15 —		10.4			(13 O to	19.4) Poorly graded S	AND with eilty sand and	l clavey sand			
_ _ _		11.5 10.7	5/5	SP/SM/SC	brown,	wet, ~ 60 to 90% very fi y fines, soft.					
20 —		12.1	2/2	СН	(19.4 to 22.0) Sandy CLAY, brown to gray, moist, ~ 20% fine-grained sand beds, ~ 80% high plasticity clay, firm, borehole allowed to slough in to 21.0 for well construction.						
25 — -		12.1									
30											

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Well Materials

(0.0 to 10.0) Casing, 2" sch. 40 PVC (10.0 to 20.0) Screen, 2" sch. 40 PVC, 0.01 slot (20.5 to 21.0) End Cap

Annular Materials

(0.0 to 6.0) Portland Cement with ~ 5% bentonite gel (6.0 to 8.0) Bentonite chips, 3/8" (8.0 to 21.0) Sand, 20/40 silica

Log of Boring: SJ1MW15 PASTOR, BEHLING & WHEELER, LLC **Consulting Engineers and Scientists** Completion Date: 07/19/06 Borehole Diameter (in.): 8.25 **Gulfco Marine Maintenance** Drilling Company: Best Drilling Services, Inc. Total Depth (ft): 25 Superfund Site Tim Jennings, P.G. 13554764.11 Field Supervisor: Northing: Freeport, TX Hollow Stem Auger **Drilling Method:** Easting: 3155165.2 Sampling Method: 5 ft continuous core Ground Elev. (ft. MSL): 2.5 PBW Project No. 1352 TOC Elev. (ft MSL) 5.61 Recovery (ft/ft) PID (hemo-v) Well Depth Lithologic Construction **USCS** (ft) Description Diagram (0.0 to 1.0) Sandy CLAY, brown, moist, ~ 40% fine to medium-0 3.4 grained sand, ~ 60% low plasticity clay, soft. 3.9 3/5 CL (1.0 to 7.5) Sandy CLAY, reddish-brown to gray, moist, ~ 10% 5 fine-grained sand and silt, ~ 90% medium plasticity clay. 5.9 7.3 4/5 6.9 10 5.9 5.5 4.5/5 (7.5 to 20.0) Silty Clayey SAND, brown, moist to wet below 10.0, ~ 20% to 40% high plasticity fines as interbeds, ~ 60% to 80% very SP/SM fine to fine-grained sand with poorly graded sand interbeds at 11.5 to 12.5 and 13.2 to 15.0, soft. 15 7.3 8.4 5/5 7.5 20 5.9 (20.0 to 23.7) Silty CLAY, gray, moist, high plasticity, firm, first confining clay. 9.2 5/5 (23.7 to 25.0) Poorly graded SAND, brown, wet, very fine to \$Ř 10.8 fine-grained sand, soft, borehole allowed to slough in to 24.0 for well 25 construction. 30

PBW

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Well Materials

(0.0 to 10.0) Casing, 2" sch. 40 PVC (10.0 to 20.0) Screen, 2" sch. 40 PVC, 0.01 slot (20.5 to 20.5) End Cap

Annular Materials

(0.0 to 5.5) Portland Cement with \sim 5% bentonite gel (5.5 to 7.5) Bentonite chips, 3/8" (7.5 to 21.0) Sand, 20/40 silica (21.0 to 24.0) Bentonite chips, 3/8"

	R, BEHLING of sulting Engine				Log of Boring:	SJ7MW16				
G	Gulfco Marine I Superfun Freepor PBW Project	nd Site t, TX		Drilling Field Si Drilling	ction Date: 07/18/06 Company: Best Drilling Services, Inc. Lupervisor: Tim Jennings, P.G. Method: Hollow Stem Auger Ing Method: 5 ft continuous core	Borehole Diameter (in.): Total Depth (ft): Northing: Easting: Ground Elev. (ft. MSL): TOC Elev. (ft MSL)	8.25 25 13554383.75 3155635.14 4.7 7.19			
Depth (ft)	Well Construction Diagram	PID (v-mdd)	Recovery (ft/ft)	uscs		thologic scription				
0 _ - - 5 —		0	5/5	Fill	(0.0 to 2.0) FILL, crushed shell (2.0 to 3.4) FILL, sandy gravel roots, moist.		nts, abundant			
3 — - - - 10 —		0.3 0.2 0.2	5/5	ÇL	(3.4 to 10.2) Sandy CLAY and reddish-brown and gray, moist, medium-grained sand, ~ 80% to very firm, interbedded poorly gr	~ 10% to 20% fine to 5 90% medium to high	plasticity clay,			
- - -		0.1	5/5	SM	(10.2 to 11.4) Silty SAND, brow to 70% fine-grained sand. (11.4 to 17.0) Poorly graded S					
15 —		0.1 0.1 0.4	5/5	sc	(17.0 to 18.5) Clayey SAND, brown, wet, ~ 50% high plasticity clay ~ 50% fine-grained sand, very soft.					
20 —		1.9 1.5 2.3	5/5	SP.	(18.5 to 21.9) Poorly graded S thin (< 0.2 inches) sandy clay in (21.9 to 25.0) Sandy CLAY, da fine-grained sand, ~ 80% high at 21.9 to 22.5, soft, borehole a construction	terbeds locally, very so ark grayish-brown, moist plasticity clay, few intert	ft. t, ~ 20% pedded sands			
25 —		•			construction.					
_										

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Well Materials

(0.0 to 12.5) Casing, 2" sch. 40 PVC (12.5 to 22.5) Screen, 2" sch. 40 PVC, 0.01 slot (22.5 to 23.0) End Cap

Annular Materials

(0.0 to 7.0) Portland Cement with ~ 5% bentonite gel (7.0 to 9.0) Bentonite chips, 3/8" (9.0 to 23.0) Sand, 20/40 silica

	R, BEHLING o				Log of Boring: SL8MW17						
G	Gulfco Marine I	Mainter	nance			tion Date:	07/18/06		Borehole Diameter (in.):	8.25	
	Superfun							Services, Inc.	Total Depth (ft):	33	
	Freepor	t, TX				pervisor:	Tim Jenning		Northing:	13554520.95	
					_	Method:	Hollow Stem		Easting:	3155809.04	
	PBW Project	No. 13	52		Sampiir	ig ivietnoa:	5 ft continuo	ous core	Ground Elev. (ft. MSL):	2.9	
	T			I		I			TOC Elev. (ft MSL)	5.87	
Depth (ft)	Well Construction Diagram	(v-mdd) Old	Recovery (ft/ft)	U	scs				hologic scription		
0 _ - - 5 —		0 6.8	4/5		SP SL	~70% n (0.5 to 2 medium sand, < (2.5 to 4	nedium plas 2.5) SAND to high pla 5% oyster 5.0) Poorly	sticity CLAY, < and clayey S asticity clay, ~ shell fragmer graded SAND	n, moist, ~ 30% fine-gr < 5% oyster shell fragr 6AND, brown, moist, ~ 60% to 70% very fine ats, soft. brown, moist, very fine n, moist, ~ 30% fine-gr	nents, soft. 30% to 40% to fine-grained e-grained, soft.	
10 —		0 8.7	3.25/5		* H	√~70% c	lay. 11.3) Sanc	ly CLAY, brov	wn, moist, ~ 30%, fine- 5 thin sand interbeds.		
- - - 15 —	5.6 7.2 3.5/5			SF	vsm.	AND and SILT, brown, o 30% high plasticity f					
- - - 20		2.3	2/5							,	
- - - 25 —		36.4	5/5		SP:	(15.0-30	D.O) SAND	as above wit	h decreassing silt cont	ent below 15.0.	
 		38.2 40.1	3.5/5								
30 —		50 52.6	3/3			20% fin	e-grained s		ottled gray and brown, o 90% medium plastic es.		

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Well Materials

(0.0 to 15.0) Casing, 2" sch. 40 PVC (15.0 to 25.0) Screen, 2" sch. 40 PVC, 0.01 slot (25.0 to 25.3) End Cap

Annular Materials

(0.0 to 9.0) Portland Cement with $\sim 5\%$ bentonite gel (9.0 to 11.0) Bentonite chips, 3/8" (11.0 to 25.3) Sand, 20/40 silica

	R, BEHLING ulting Engine					Ĺ	og of E	Boring:	NB4MW18			
G	ulfco Marine Superfur Freepol	nd Site	nance		Drilling (Field Su	tion Date: Company: ipervisor:	05/30/07 Master Monitorin	PG	Borehole Diameter (in.): Total Depth (ft): Northing:	8.25 19 13554255.42		
	PBW Project	No. 13	52			Method: ng Method:	Hollow Stem 5 ft. split spo	<u></u>	Easting: Ground Elev. (ft. MSL): TOC Elev. (ft MSL)	3154474.18 2.5 4.96		
Depth (ft)	Well Construction Diagram	PID (ppm-v)	Recovery (ft/ft)	US	SCS	Description						
0 = 2 = =		0.0	4/5	SO	JSM	∖ fine-gra	ained		orown, slightly moist, ve on throughout.	ery		
4 =		0.4	4/5									
6 -		0.2	5/5		2H	moist, I becom	high plasticit ing gray and	ty, slightly firn d brown/stron	k brown, and some bla n, root fibers in top 2 fe ig brown, mottled, mois is some areas of satura	et, at 2.5 feet sture content		
10 —		0.2	0,0				n-brown with		nottling at 6.9 feet, bed			
12 —		0.4	5/5									
14 —		0.5			NE	reddish			ayey SILT, mostly gray 6 clay, ~ 5-10% very fir			
16 —		0.5	2/2		4 b 7	sand, soft, th	in shell fragı	ment layer at	: 12.3 feet.			
18 —			2/2		;H			CLAY, gray	with some olive-gray, s	slightly mottled,		
20 =	V / / / / 					I	· <u> </u>	•				
22 —												
24 — - 26 —												
28 —												
30 _												

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Well Materials

(0.0 to 7.5) Casing, 2" sch. 40 PVC (7.5 to 17.5) Screen, 2" sch. 40 PVC, 0.01 slot (17.5 to 18.0) End Cap

Annular Materials

(0.0 to 4.0) Portland Cement with 5% bentonite gel (4.0 to 6.0) Bentonite chips, 3/8" (6.0 to 18.0) Sand, 20/40 silica (18.0 to 20.0) Coated bentonite pellets

Log of Boring: NG3MW19 PASTOR, BEHLING & WHEELER, LLC **Consulting Engineers and Scientists** Borehole Diameter (in.): 8.25 Completion Date: 05/23/07 Gulfco Marine Maintenance Master Monitoring Services, Inc. 17 Drilling Company: Total Depth (ft): Superfund Site 13555039.92 Freeport, TX Field Supervisor: Tim Jennings, PG Northing: **Drilling Method:** Hollow Stem Auger Easting: 3154974.73 Sampling Method: 5 ft. split spoon Ground Elev. (ft. MSL): 2.2 PBW Project No. 1352 TOC Elev. (ft MSL) 5.08 Recovery (ft/ft) Well PID (ppm-v) Depth Lithologic Construction **USCS** (ft) Description Diagram (0.0 to 0.4) Clayey SAND, brown, moist, ~ 20% low plasticity fines, 0 0.1 80% fine to medium-grained sand, soft. 2 0.0 4/5 0.4 (0.4 to 7.5) Sandy CLAY, gray 0.4 - 1.4 feet becoming reddish CL brown with gray mottling below, moist, ~ 10-20% very fine to fine-grained sand, ~ 80-90% medium plasticity clays, firm to soft, few oxidized iron nodules, becomes saturated below 4 feet. 6 0/5 8 (7.5 to 12.0) Silty clayey SAND, brown, wet, ~ 20-50% low plasticity fines, ~ 70-80% very fine to fine-grained sand, very soft, increasing 10 0.6 clay content below 11 feet, grades into sandy clay at 12 feet. 0.2 12 5/5 0.1 (12.0 to 16.1) Sandy CLAY, grayish brown, wet, ~10-20% СГ fine-grained sand, ~ 80% medium plasticity clay, very soft. 0.0 16 2/5 (16.1 to 17.0) SAND, poorly graded, brown, wet, fine to SP medium-grained, abundant shell fragments, soft. 18 20 22 24 26 28 30

PBW

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Well Materials

(0.0 to 4.0) Casing, 2" sch. 40 PVC (4.0 to 13.5) Screen, 2" sch. 40 PVC, 0.01 slot (13.5 to 14.0) End Cap

Annular Materials

(0.0-1.0) Potland Cement with 5% bentonite gel (1.0-3.0) Bentonite chips, 3/8" (3.0-14.0) Sand, 20/40 silica (14.0-15.0) Coated bentonite pellets

2" borehole caved in from 15-17'

	R, BEHLING sulting Engine				Log of Boring: OMW20							
G	Sulfco Marine I Superfur Freepor	nd Site	nance		Drilling Field Su	tion Date: Company: pervisor:	Tim Jenning	• • • • • • • • • • • • • • • • • • • •	Borehole Diameter (in.): Total Depth (ft): Northing:	17.5 13554952.64		
	PBW Project	No. 13	52			Method: ng Method:	Hollow Ster 5 ft. split sp		Easting: Ground Elev. (ft. MSL): TOC Elev. (ft MSL)	3154011.31 1.6 4.88		
Depth (ft)	Well Construction Diagram	PID (ppm-v)	Recovery (ft/ft)	U:	scs				hologic scription			
2		0.0	5/5		CL	∖ fine ∖sand, ∕	, ,		dark gray, wet, ~ 20% clay, soft, abundant ro	1		
6 —		0.0			CL		ne sand, ~		ish-brown with gray m plasticity clay, firm, fev			
6 - 8 - 10			4/5		CF				y with reddish-brown r edium plasticity clay, fi			
12 -		0.1	5/5		CL	silt, > 8 concre	0% high p tions.	lasticity clay, s	lish brown, wet, < 20% soft, a few small carbo	nate		
14 —		0.2			CL	plastici (13.6 to	ty clay, ver o 15.2) Sil	y soft. ty CLAY, redd	ish-brown with gray m medium plasticity	ottling, moist, ~		
16 —		0.2	2.5/2.5		ÇL	(15.2 to nodule		AY, gray, moi	ist, low plasticity, friabl	e, a few iron		
18 —												
20 —												
24 -												
26 —												
28 -												
30												

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Well Materials

(0.0 to 6.0) Casing, 2" sch. 40 PVC (6.0 to 15.5) Screen, 2" sch. 40 PVC, 0.01 slot (15.5 to 16.0) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with 5% bentonite gel (3.0 to 5.0) Bentonite chips, 3/8" (5.0 to 16.0) Sand, 20/40 silica

2" borehole caved in from 16-17.5'

	R, BEHLING sulting Engine				Log of Boring: OMW21								
G	ulfco Marine		nance			tion Date:	05/21/07	0	Borehole Diameter (in.):	8.25			
	Superfur					Company:	Master Monitoring		Total Depth (ft): Northing:	20 13555272.78			
	Freepo	π, ΙΧ				ipervisor: Method:	Tim Jennings, P Hollow Stem A		Easting:	3154248.25			
	DB\W Draigat	No. 12	50				5 ft. split spoon		Ground Elev. (ft. MSL):	2.4			
	PBW Project	. INO. 13)UZ						TOC Elev. (ft MSL)	5.73			
Depth (ft)	Well Construction Diagram	PID (v-mdd)	Recovery (ft/ft)	U	scs	Lithologic Description							
0 -		0.0			ÇL				brown, moist, ~ 10-20 edium plasticity clays.	% very			
2 -		0.0	5/5				aniou ounu,	00 00 70 1110	odium placificity days.				
4 —													
6 - 8 - 10		0.0			CF	firm to	soft, reddish-b	rown with	sh-brown, moist, mediu gray mottling below 4 f g below 5.7 feet, wet b	eet, becomes			
8 -		0.0	4/5										
10 =		0.0											
12		0.0	1/5		CL	fine-gra fragme by 15 f mediur	ained sand, ~ nts, very soft. eet, light gray n-grained sand	80-90% me Shell frag , ~ 10-20% d, ~ 50-609	AY, gray, wet, ~ 10-20 ^o edium plasticity clay, a ments and sand conte o shell fragments, ~ 30 % medium plasticity cla	few shell nt increasing 40% fine to y. Sand			
16 —		0.1	1.25/2.5			fragme	nts, ~ 10% ve	ry fine-grai	t, grayish brown, ~ 5% ned sand, ~ 85% med tween 16.3 and 17.5 t	lium plasticity			
18 —			2.5/2.5										
20 =					ÇL/		o 20.0) Silty C ty clay, firm.	CLAY, gray	, moist, ~ 40-50% silt,	~ 50-60% low			
22 -													
24 —													
26 —													
28 —	-												
30													

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Well Materials

(0.0 to 8.0) Casing, 2" sch. 40 PVC (8.0 to 18) Screen, 2" sch. 40 PVC, 0.01 slot (18 to 18.5) End Cap

Annular Materials

(0.0 to 4.5) Portland Cement with 5% bentonite gel (4.5 to 6.5) Bentonite chips, 3/8" (6.5 to 18.5) Sand, 20/40 silica

2" borehole caved in from 18.5-20"

PASTOR, BEHLING & WHEELER, LLC Log of Boring: SA4MW22 **Consulting Engineers and Scientists** 05/30/07 Borehole Diameter (in.): 8.25 Completion Date: Gulfco Marine Maintenance Drilling Company: Master Monitoring Services, Inc. Total Depth (ft): 15 Superfund Site Northing: 13553934.09 Field Supervisor: Len Mason, PG Freeport, TX **Drilling Method:** Hollow Stem Auger Easting: 3154726.12 Sampling Method: 5 ft. split spoon Ground Elev. (ft. MSL): PBW Project No. 1352 5.5 7.79 TOC Elev. (ft MSL) Recovery (ft/ft) Well PID (ppm-v) Depth Lithologic Construction USCS (ft) Description Diagram (0.0-3.1) Silty clavey SAND, reddish-brown, dry, ~ 5-10% low 0 plasticity clay, mostly fine-grained sand with some medium-grained, SC-SW some root material, subrounded, loose, clay content increasing at 2 2.2 feet to ~ 20-30%, some gravel and shell fragments, becoming 4.9/5 slightly moist, decayed plant material at 3.0 to 3.1 feet. SM. (3.1 to 4.4) Clayey silty SAND, grayish-brown, slightly moist, ~ 10% clay, ~ 30% silt, ~ 60% very fine-grained, subrounded sand. CH 0.4 (4.4 to 5.0) CLAY, dark gray to grayish-black, dry slightly moist, medium plasticity, firm. 6 SM/SC (5.0 to 8.1) Clayey silty SAND, grayish-brown, moist, ~ 30% clay 0.3 and silt, ~ 70% subrounded fine-grained sand, some clay lenses 5/5 8 throughout, becoming saturated at 6 feet, increasingly clayey at 7.1 0.6 10 0.3 (8.1 to 15.0) Slightly silty CLAY, reddish-brown with some gray, very ĊH, 12 moist, high plasticity clay, soft becomes mostly gray with some 4.9/5 reddish brown at 12 feet, some decayed vegetation. 0.6 14 16 18 20 22 24 26 28 30

PBW

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Well Materials

(0.0 to 4.5) Casing, 2" sch. 40 PVC (4.5 to 14.5) Screen, 2" sch. 40 PVC, 0.01 slot (14.5 to 15.0) End Cap

Annular Materials

(0.0 to 2.0) Portland Cement with 5% bentonite gel (2.0 to 4.0) Bentonite chips, 3/8" (4.0 to 15.0) Sand, 20/40 silica

	R, BEHLING of sulting Engineer				Log of Boring: NC2B23B							
G	ulfco Marine I	Mainter	ance		Comple	tion Date:	05/31/07		Borehole Diameter (in.):	12/8.25		
	Superfun					Company:	Master Monitoring Services, Inc.		Total Depth (ft):	40		
	Freepor	t, TX		-		pervisor:	Tim Jennings, PG		Northing:	13554659.58		
					Drilling I		Hollow Stem Auger		Easting:	3154227.19		
	PBW Project	No. 13	52		Samplin	ng Method:	5 ft split spoon	(Ground Elev. (ft. MSL):	2.0		
									TOC Elev. (ft MSL)	2.37		
Depth (ft)	Well Construction Diagram	(v-mdd)	Recovery (ft/ft)	US	scs			Desc	ologic cription			
0 _				1/1/6	L//X				gray, wet, ~ 10% fine	sand, ~ 90% _/		
_						∖mediun	n plasticity clay, soft, a	abur	ndant roots.	/		
8 —						moist to medium increasir	locally wet, ~ 10-20% plasticity clay, firm an ng below 4.5 feet, bro becoming wet at 10	6 ver nd loo own (lt, reddish-brown with y fine-grained sand, c cally friable, gray mott organic matter from 8 , a few small sand len	80-90% ling to 8.5 feet,		
_	*****				SP.	(12.6	to 14.1) Sandy silty C	LAY	and SAND, gray, we	t, ~ 20-30%		
	1			1.7.1.7.7	Taranta de la constante	∖ fine-gı	ained sand, ~ 20-30%	% sil	t, ~ 50% medium plas			
l . –	₩	0.0		11/10	H	∖ <u>oyster</u>	shells thin (< 0.1") sa	and i	interbeds.	////////		
16 —	1 8888883	0.0		///¢	<i>Y</i> /// <i>Y</i>				h-brown with gray mot	tling, moist, ~/		
			3/5	777	++++	\ (15.0 to	silt, ~ 80-90% mediur	III DE	gray, moist to locally	wot ~		
_									nd silt, ~ 85-90% med			
20	1 888883	0.0							5 to 15.7 feet and at			
20 —				///E	///4				ish-gray (olive), moist,			
_		0.0							zone of carbonate no			
_			5/5			and 22.	2 feet.					
24 —		0.0				(0.0.4.)	00.4) 011.01.4)4					
_		0.0			7///				h brown with gray mot			
_	[[[[]]] []					20-30%	Siit, ~ 10-00% mediul	ııı pı	asticity clay, soft and	mable.		
28 —		0.0	5/5						greenish gray with bro			
_									ained sand, ~ 80-90%			
_		0.5		////6	<i>[[]</i>	plasticit	/ clay, very firm, locall	ly fra	ctured, ~ 2-inch thick	lens of		
32 —	[KXXXX] [poorly g	raded, tine-grained, g	gray	sand at 27.8 to 28 fe	et, becoming		
	\(\frac{1}{2} \	0.2	5/5				o reddisn-brown with (ite nodules locally froi		mottling below 30 fee	ei, abundant		
_	[XXXXX]					Caibolla	ite nodules locally 1101	111 30	J 10 JZ 1661.			
_		0.0		77//								
36 —									brown with gray mottli	ng, moist,		
	KXXXXX	0.0	5/5			med	ium plasticity, very stif	tf, fa	t clay.			
			5/5	///c	#///	N1_1-	. Dortland Camant	#L =	O/ hontonita ani nis	d in the		
40 —					Note: Portland Cement with 5% bentonite gel placed in the annular space outside of the surface casing (0.0 to 15.0 foot depth interval).							
	<u> </u>											
		T 7		Well	Materia	als		Annı	ular Materials			
	PRV	/\ /					na. 8" sch. 40 PVC		40.00.00.00.00.00.00			

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(0.0 to 15.0) Surface Casing, 8" sch. 40 PVC

(15.0 to 40.0) Portland Cement with 5% bentonite gel

Lithologic description for 0 to 15 foot depth interval from NC2MW28 boring

PASTOR, BEHLING & WHEELER, LLC Log of Boring: ND4MW24B **Consulting Engineers and Scientists** Completion Date: 05/29/07 Borehole Diameter (in.): 12/8.25 Gulfco Marine Maintenance Master Monitoring Services, Inc. Drilling Company: 34 Total Depth (ft): Superfund Site Northing: 13554569.19 Field Supervisor: Len Mason, PG Freeport, TX Hollow Stem Auger Drilling Method: Easting: 3154749.48 Sampling Method: 5 ft split spoon Ground Elev. (ft. MSL): 3.5 PBW Project No. 1352 TOC Elev. (ft MSL) 5.7 Recovery (ft/ft) PID (ppm-v) Well Depth Lithologic Construction **USCS** (ft) Description Diagram CL (0.0 to 0.2) Silty SAND, light brown, moist, very fine-grained sand, 0 CL 2 (0.2 to 0.6) Sandy CLAY, dark brown, moist, ~ 20% very fine-grained ÇĻ sand, ~ 80% medium plasticity clay, slightly firm. (0.6 to 2.0) Sandy CLAY, dark brown, becomes black below 1.5 feet. (2.0 to 4.2) Sandy CLAY, locally black and dark reddish-brown, becomes highly plastic below ~ 3.0. CĽ (4.2 to 8.2) Sandy CLAY as above, reddish-brown, moist, wet below 5.9 feet, with thin sand interbeds locally. 8 (8.2 to 10.4) Sandy CLAY, brown, wet, ~ 40% very fine-grained sand, ~ 60% highly plastic clay, soft. 10 12 (10.4 to 15.6) Poorly graded SAND with clayey sand, brown, wet, ~ 80% fine-grained sand, ~ 20% high plasticity clay, very soft. 14 16 (15.6 to 17.0) Poorly graded SAND and sandy CLAY, brown, wet, ~ CLISP 50% very fine-grained sand, ~ 50% high plasticity clay, very soft. 1.3 (17.0 to 19.0) Sandy CLAY, brown to grayish brown, wet, <5% 18 СH fine-grained sand, ~95% high plasticity CLAY, soft. $\mathbf{C}\Gamma$ (19.0 to 20.5) Silty CLAY with some very fine-grained sand, gray to 20 brownish-gray, wet, low to medium plasticity, soft. 8.0 SM 4/5 (20.5 to 22.5) Silty SAND, brown to brownish-gray, wet, sand is 22 fine-grained with some medium sized grains, loose. 0.8 CH (22.5 to 24.0) Grades into a silty CLAY with trace sand, brown to gray 24 wet, high plasticity, soft. 0.3 26 5/5 0.1 (24.0 to 34.0) Slightly silty CLAY with some trace sand, brown to gray, 28 wet, high plasticity, becoming slightly firm to stiff at 29 feet. 0.1 CH 30 Note: Portland Cement with 5% bentonite gel placed in the annular 0.3 space outside of the surface casing (0.0 to 19.0 foot depth interval). 4/5 32 0.4 34 36 38 40

PBW

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<u>Well Materials</u>

(0.0 to 19.0) Surface Casing, 8" sch. 40 PVC (0.0 to 21.5) Casing, 2" sch. 40 PVC

(21.5 to 26.5) Screen, 2" sch. 40 PVC, 0.01 slot (26.5 to 27.0) End Cap

Lithologic description for 0 to 19 foot depth interval from ND4W03 boring

This boring log should not be used separately from the original report.

Annular Materials

(0.0 to 17.0) Portland Cement with 5% bentonite gel (17.0 to 20.0) Bentonite chips, 3/8" (20.0 to 27.0) Sand, 20/40 silica (27.0 to 34.0) coated bentonite pellets

PASTOR, BEHI Consulting E					Ĺ	og of Boring:	NG3MW25B				
	arine M perfund reeport	d Site	ance	Drilling Field St	etion Date: Company: upervisor: Method:	05/30/07 Master Monitoring Services, Inc. Tim Jennings, PG Hollow Stem Auger	Borehole Diameter (in.): Total Depth (ft): Northing: Easting:	12/8.25 35 13555045.25 3154968.84			
PBW P	roject	No. 13	52	-		5 ft split spoon	Ground Elev. (ft. MSL): TOC Elev. (ft MSL)	2.2 4.91			
Depth (ft) We Constru	uction	PID (ppm-v)	Recovery (ft/ft)	USCS	Lithologic Description						
0		0.1 0.9 0.5 0.0	4/4 2/5 5/5	SP.	(0.4 to with gr sand, nodule (7.5 to fines, clay co (12.0 t fine-gr reddis) (16.3 t to medical (19.0 t (21.1 t poorly clay, v (22.7 t mediu) (32.0 t mediu) (32.0 t mediu) (32.0 t mediu)	0.4) Clayey SAND, brownine to medium-grained services, becomes saturated by the services of the	graded, brown to gray, ded, with abundant she grained sand as thin in grayments. The poorly graded, fine-grained sand as thin in grayments. The poorly graded, fine-grained sand sand as thin in grayments. The poorly graded, fine-grained sand sand as thin in grayments. The poorly graded, fine-grained sand sand as thin in grayments. The poorly graded, fine-grained sand sand sand sand sand sand sand san	ig reddish brown fine-grained ew oxidized iron % low plasticity oft, increasing 12 feet. ~10-20% soft becomes wet, sand is fine ell fragments (~ ~90% medium terbeds. oft, with ~ ained, soft. wet, ~50% edium plasticity ed, ~30%			

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Well Materials

(0.0 to 15.0) Surface Casing, 8" sch. 40 PVC (0.0 to 17.0) Casing, 2" sch. 40 PVC

(17.0 to 27.0) Screen, 2" sch. 40 PVC, 0.01 slot (27.0 to 27.5) End Cap

Annular Materials

(0.0 to 13.5) Portland Cement with 5% bentonite gel (13.5 to 15.5) Bentonite chips, 3/8" (15.5 to 27.5) Sand, 20/40 silica

Lithologic description for 0 to 17 foot depth interval from NG3MW19, borehole caved in from 27.5 to 35 feet.

This boring log should not be used separately from the original report.

	R, BEHLING sulting Engine				Log of Boring: OB26B						
G	Sulfco Marine	Mainter	nance	·	Comple	tion Date:	05/30/07		Borehole Diameter (in.):	8.25	
	Superfur					Company:	-	oring Services, Inc.	Total Depth (ft):	40	
	Freepoi	rt, TX				pervisor:	Tim Jenning		Northing:	13554963.98	
						Method:	Hollow Ster	_	Easting:	3154008.4	
	PBW Project	No. 13	52		Samplir	ng Method:	5 ft split sp	oon	Ground Elev. (ft. MSL):	1.6	
			<u> </u>	<u> </u>		Ī			TOC Elev. (ft MSL)	NA	
Depth (ft)	Well Construction Diagram	PID (ppm-v)	Recovery (ft/ft)	U:	scs				hologic scription		
2 —					CL	∖ fine-gr		i, ~ 80% medi	, dark gray, wet, ~ 20% um plasticity clay, soft,		
6 -					CL		ne sand, ~		lish-brown with gray mo plasticity clay, firm, few		
8 =		,			cr				y with reddish-brown m		
10 -		;			CL	(10.0 t	o 12.4) Si	lty CLAY, redo	lish brown, wet, < 20%	low plasticity	
12 =					CL				soft, a few small carbor v, wet, ~ 50 % silt, ~ 50		
14 =		;		///	CL	√ plastici	ity clay, ve	ry soft.	lish-brown with gray mo		
16 -		, , ,			CL				sand, ~ 80% medium p		
18 =		0.0	3/3		CL	∖nodule	s, firm.		ist, low plasticity, friable with brown mottling, mo	/	
20 =		0.0			SP.	∖silt decr	easing wit	h depth, ~ 80-	90% medium plasticity		
22 =		0.0	5/5		Cr	\((20.2 t			ray, moist, ~ 40% low p	plasticity clay, ~	
24 =		0.0			CL	\(20.6 t \silt, ~ 8	o 22.9)) S 30-90% me	ilty CLAY, gra	y with brown mottling, r		
26 —		0.0			////	∖nodule	S.				
28 =		0.0	5/5				% silt, ∼ 80	-90% medium	lish brown with gray mo plasticity clay, < 5% ca ctured, very stiff.		
30 =		0.0					-				
32 =		0.0	5/5		st //	10% sil	t, ~ 90% m	nedium plastici	nish-gray with brown mo ty clay, very firm to stiff	, few	
34 =		0.0				carbona	ate nodule		wn below 34 feet, incre		
36 — 38 —			5/5						bentonite gel placed ii sing (0.0 to 17.0 foot c		
40 _=											

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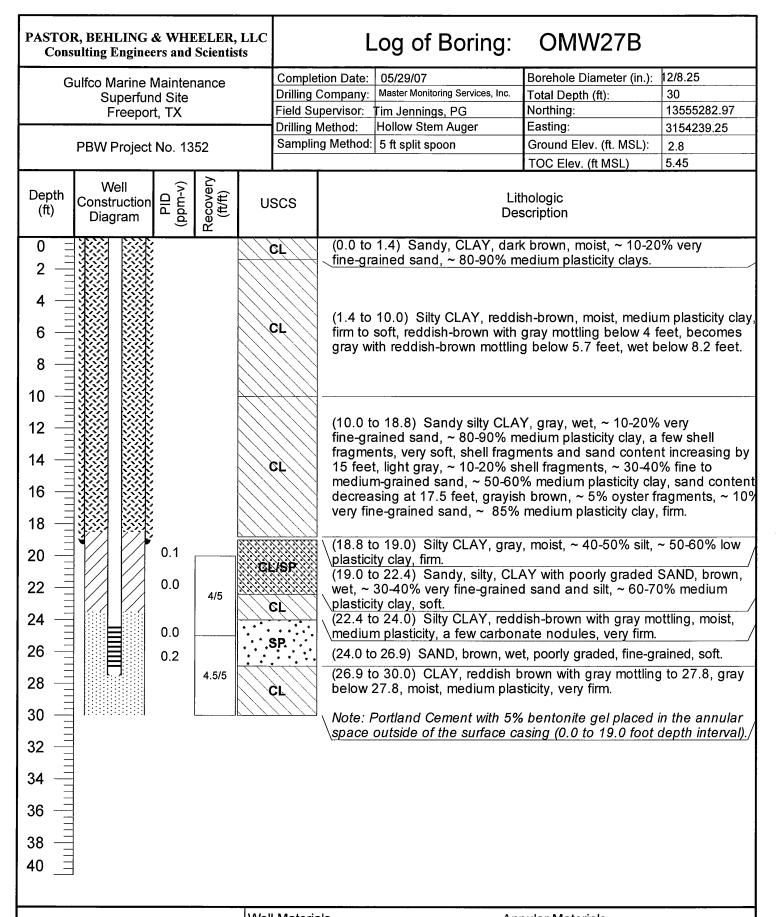
Well Materials

(0.0 to 17.0) Surface Casing, 8" sch. 40 PVC

Annular Materials

(17.0 to 40.0) Portland Cement with 5% bentonite gel

Lithologic description for 0 to 17 foot depth interval logged from OMW20 boring



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<u>Well Materials</u>

(0.0 to 19.0) Surface Casing, 8" sch. 40 PVC (0.0 to 24.5) Casing, 2" sch. 40 PVC

(24.5 to 27) Screen, 2" sch. 40 PVC, 0.01 slot (27.0 to 27.5) End Cap

Lithologic description for 0 to 19 foot depth interval logged from OMW21 boring

This boring log should not be used separately from the original report.

Annular Materials

(0.0 to 18.5) Portland Cement with 5% bentonite gel (18.5 to 23.5) Bentonite chips, 3/8" (23.5 to 30.0) Sand, 20/40 silica

Log of Boring: PASTOR, BEHLING & WHEELER, LLC NC2MW28 Consulting Engineers and Scientists 05/25/07 Borehole Diameter (in.): 8.25 Completion Date: Gulfco Marine Maintenance 15 Drilling Company: Master Monitoring Services, Inc. Total Depth (ft): Superfund Site 13554651.88 Field Supervisor: Northing: Freeport, TX Tim Jennings, PG Drilling Method: Hollow Stem Auger Easting: 3154233.16 Sampling Method: 5 ft. split spoon Ground Elev. (ft. MSL): 1.8 PBW Project No. 1352 TOC Elev. (ft MSL) 4.76 PID (ppm-v) Well Depth Lithologic Construction USCS (ft) Description Diagram (0.0 to 0.7) Sandy CLAY, dark gray, wet, ~ 10% fine-grained sand, ~ 90% medium plasticity clay, soft, abundant roots. 0.2 0.0 5/5 0.0 (0.7 to 12.6) Sandy CLAY with silt, reddish-brown with gray mottling, moist to locally wet, ~ 10-20% very fine-grained sand, ~ 80-90% 0.0 medium plasticity clay, firm and locally friable, gray mottling increasing below 4.5 feet, brown organic matter from 8 to 8.8 feet, no odor, 4/5 becoming wet at 10 feet, a few thin sand lenses from 12 to 0.0 12.6 feet. 10 0.0 0.0 12 5/5 (12.6 to 14.1) Sandy silty CLAY, gray, wet, ~ 20-30% fine-grained CLISP sand, ~ 20-30% silt, ~ 50% medium plasticity clay, very soft, few 0.0 oyster shells, a few thin (< 0.1") sand interbeds. (14.1 to 15.0) Silty CLAY, reddish-brown with gray mottling, moist, ~ 10-20% silt, ~ 80-90% medium plasticity clay, firm. 16 18 20 22 24 26 28 30

PBW

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Well Materials

(0.0 to 5.0) Casing, 2" sch. 40 PVC (5.0 to 14.5) Screen, 2" sch. 40 PVC, 0.01 slot (14.5 to 15.0) End Cap

Annular Materials

(0.0 to 1.0) Portland Cement with 5% bentonite gel (1.0 to 4.0) Bentonite chips, 3/8" (4.0 to 15.0) Sand, 20/40 silica

G	ulfco Marine	Mainter	ance			tion Date:	05/31/07		Borehole Diameter (in.):	8.25		
	Superfur					Company:	Master Monitorii		Total Depth (ft):	17.5		
	Freepo	rt, TX				ipervisor:	Tim Jennings		Northing:	13554733.7		
					Drilling I		Hollow Stem		Easting:	3154525.86		
	PBW Project	No. 13	52		Samplin	ng Method:	5 ft. split spo	on	Ground Elev. (ft. MSL): TOC Elev. (ft MSL)	2.9 5.33		
epth (ft)	Well Construction Diagram	PID (ppm-v)	Recovery (ft/ft)	US	scs	Lithologic Description						
2 —		4.2			<u>.</u>	locally	moist, ~ 20%		th gravel, brown with gray mottling, ined sand, ~ 80% medium plasticity clay ents, soft.			
4 -= = 3 -=		249 276 4.5/5			∑L	moist b		et, soft to firm	dark gray, wet from 1.8 n, decaying marsh type			
3 — = = = =		276162	4.5/5	1/ /	/SM	sand,	- 30-80% sil	t, ~ 30-60% ı	brown, wet, ~ 10-20% medium plasticity clay, om 8.3 to 8.6 feet, mo	soft, wood		
2 —		585	3/5		NL	like od	or, local blad	k staining fro	om 10.5 to 12 feet. AND and silty SAND, b			
4 -		884		SP	/SM	10-30% feet, ~ NAPL	% silt, wet loo 70 -100% v visible within	cally from 12. ery fine to fin sand from 1	5 to 13.5 feet and wet e-grained sand, locally 2.5 to 13.5 feet and s	t below 15.4 y abundant light to		
3 -		527	2.5/2.5) #) #) #) #) #) #) #) #) #) #	**************************************	modera			within sand from 15 to aple (SB-MW29-01) co			
3 -					<u> </u>	(16.6 to 80-90%)	o 17.5) Silty	asticity clay,	ish-brown, wet, ~ 10-2 very soft, no NAPL sta			
)												
2 — =												
\$ == ==================================												
3 —												
3 —												
) =	1											

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Well Materials

(0.0 to 7.0) Casing, 2" sch. 40 PVC (7.0 to 17.0) Screen, 2" sch. 40 PVC, 0.01 slot (17.0 to 17.5) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with 5% bentonite gel (3.0 to 5.0) Bentonite chips, 3/8" (5.0 to 17.5) Sand, 20/40 silica

Log of Boring: NE3MW30B **Consulting Engineers and Scientists** Completion Date: 11/26/07 Borehole Diameter (in.): 12.5/8.25 Gulfco Marine Maintenance **Universal Drilling Services** 35.5 Drilling Company: Total Depth (ft): Superfund Site 13554690.78 Field Supervisor: Len Mason, PG Northing: Freeport, TX Drilling Method: Hollow Stem Auger Easting: 3154741.85 Sampling Method: Ground Elev. (ft. MSL): 5 ft core barrel 3.5 PBW Project No. 1352 6.70 TOC Elev. (ft MSL) Recovery (ft/ft) Well PID (ppm-v) Depth Lithologic Construction USCS (ft) Description Diagram <u>ZD</u> (0.0-0.9) Sandy, silty, CLAY, brown with some orange mottling, 0 moist, ~ 10-15% very fine sand, ~ 30% silt, soft, medium to low 2 ÇΓ plasticity. 4.7/5 (0.9-2.8) CLAY, brown, moist, medium plasticity, trace wood 4 fragment at 1.8 feet. ŒĽ (2.8-8.0) Sandy CLAY, gray, moist to wet at 4.5 feet, some (~ 10%) 6 sandy lenses, soft, medium-high plasticity, gray with some brown mottling below 5 feet. 4/5 8 (8.0-12.5) Sandy CLAY, brown with gray mottling to 10 feet, brown 10 CL below 10 feet, moist, ~ 20-30% fine sand, very soft, medium plasticity, becomes wet below 11.2 feet. 12 5/5 14 (12.5-17.0) Silty SAND, brown, wet, sand is very fine, ~ 20% silt, SM loose. 16 2.5/3 SM-SC (17.0-18.0) Clayey, silty, SAND, brown with some gray, wet, ~ 18 10-15% gray clay, ~ 30% silt, sand is very fine, loose. 2/2 (18.0-20.0) CLAY with some silty sand zones, brown, moist, soft, 20 medium-high plasticity, becomes gray and firm at 19 feet. 246 22 (20.0-25.0) Silty SAND, brown, wet, sand is very fine, loose, 2/5 SM chemical odor, sheen observed, flowing sand. 205 (25.0-25.5) Slightly sandy CLAY, gray, moist, ~ 5-10% very fine 133 26 2/2.5 sand, soft, medium-high plasticity, chemical odor. 135 SM/SP (25.5-26.4) Slightly clayey SAND, brown and gray, wet, ~ 10% fine 86.4 28 ∖clay layers throughout, sand very fine, slight odor. 2/2.5 (26.4-26.8) Sandy CLAY, brownish-gray, moist, high plasticity, soft 535 30 ∖to firm. (26.8-27.5) Silty SAND with some shell material, gray, wet, sand is 1/2.5 SW 32 very fine, ~ 20% silt, chemical odor. 3109 (27.5-28.5) Sandy CLAY, gray, moist, ~ 20-30% fine sand, soft, 304 2.5/2.5 high plasticity, chemical odor, wet gray sand layer with shell 34 material from 28-28.2 feet. (29.5-34.1) SAND, brown to gray, wet, shell material throughout, 36 fine to medium sand, subrounded to subangular, strong chemical odor, sheen throughout, locally abundant NAPL visible within sand 38 from 33.9 to 34.1, soil sample (SBMW30-01) collected from 33.6-34.1 feet. 40 (34.1-35.5) CLAY, gray, moist, high plasticity, firm, fat clay, slight odor, no NAPL staining or sheen observed within clay. Well Materials

PASTOR, BEHLING & WHEELER, LLC

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(0.0 to 19.5) Surface Casing, 12" sch. 40 PVC (0.0 to 25.0) Casing, 2" sch. 40 PVC (25.0 to 35.0) Screen, 2" sch. 40 PVC, 0.01 slot (0.0 to 23.0) Bentonite chips, 3/8" inside (35.0 to 35.5) End Cap

Annular Materials

(0.0 to 18.5) Portland Cement with 5% bentonite gel outside of surface casing surface casing (23.0 to 35.5) Sand, 16/30 silica

	ulting Engineers an	u belem	lists					NE4MW31B	
Gı	ulfco Marine Mainte	enance		Completion		06/13/08		Borehole Diameter (in.):	8.0/13.0
	Superfund Site)		Drilling Cor		Universal Drilling		otal Depth (ft):	45
	Freeport, TX			Field Supe Drilling Me		Tim Jennings, P.G. Hollow Stem Auger		Northing: Easting:	3154903.18 13554709.81
	DDM/ Drainet No. 4	252		Sampling N		5 ft. split spoon		Ground Elev. (ft. MSL):	3.0
	PBW Project No. 1	302		- Camping I	····	o it. opiit opoon		OC Elev. (ft MSL)	6.01
epth (ft)	Well Construction Diagram	PID (ppm-v)	Recovery (ft/ft)	USCS			Litho	ologic ription	1.55
0				RD BASE	(0.0-0	.8) Caliche road base	e.		-
_		0.2	5/5						
_		0.3	5/5	CUCH				own mottling, moist, ~5	
5 _		0.3			tine-gi	rained sand, ~ 90 to	95% med	dium to high plasticity c	lays.
ٽ ⊣		0.4							
\dashv		0.7	5/5	ÇH.				with gray mottling, mois o 20% silt, ~70 to 80%	
-		0.2	0,0	ML	clay, :	soft.		,	
o $\overline{\ }$							yish-brov	vn, wet, ~30 to 40% hig	h plasticity cla
		0.2		SM		70% silt, soft. 1.3) Silty SAND, grav	vish-brov	vn to brown, wet, ~10 to	30% silt. ~70
-		0.2	5/5		\90% f	ine-grained sand, so	ft.		
		0.2			(11.3- √~20 tc	13.4) Sandy clayey \$ 3.30% fine-grained sa	SILT, bro and ∼50	wn, wet, ~10 to 20% hi to 70% silt, very soft.	gh plasticity o
5 —				/CH//	(13.4-	16.0) Sandy CLAY, g	grayish-b	rown, wet, ~10 to 20%	very fine-grain
-	M///////	0.2		/////	sand,	~80 to 90% high pla	sticity cl	ay, very soft.	
-			1/5	ND.	(40.0	00.0) NO DECOVED	.,		
\exists				NR	(16.0-	20.0) NO RECOVER	Υ.		
5 —		0.2	2.5/5	SP	mediu fine-gi	m-grained sand with	~5% she	rown, wet, very fine-gra Il fragments at 20.0 to th trace shell fragments	21.5, very
o — — —			0/5						
5 —			0/5	NR	(30.0-	40.0) NO RECOVER	Y in flowi	ng sands.	
0 —									
´]					(<u>4</u> 0 0-	45 0) Sandy CLAV in	shoe o	f core barrell, only reco	vered 0.2'
			0.25/5	C _L		like clay.	. 31106 0	. Solo balloli, olliy 1600	1010a U.Z.,
5			1	/////					
	PBW Behling & Wheele ouble Creek Dr., Sui		(0.0- (0.0- (18.0	-18.0) Casing,	2" sch. 4 n, 2" sch.	10" sch. 40 PVC 10 PVC 40 PVC, 0.01" slot	(0.0-12.0 (0.0-16.0 (12.0-17	ar Materials D) Cement/Bentonite slurry, Cement/Bentonite slurry, O) 3/8" bentonite chips, ins 16/30 silica sand	outside surf. ca

	R, BEHLING & WE ulting Engineers an			Log of Boring: NE4MW32C						
<u> </u>	ulfco Marine Mainte	nanas		Completion	n Date:	06/13/08	Borehole Diameter (in.):	8.0/13.0/17.5		
G	Superfund Site			Drilling Cor	mpany:	Universal Drilling	Total Depth (ft):	80		
	Freeport, TX			Field Supe	rvisor:	Tim Jennings, P.G.	Northing:	3154802.32		
				Drilling Met	thod:	Hollow Stem Auger	Easting:	13554653.07		
	PBW Project No. 1	352		Sampling N	Method:	5 ft. split spoon	Ground Elev. (ft. MSL):	3.2		
							TOC Elev. (ft MSL)	6.31		
Depth (ft)	Well Construction Diagram	PID (ppm-v)	Recovery (ft/ft)	USCS			hologic scription			
0 _				RD BASE	(0.0-0	.5) Caliche road base, plug	ged sampler, no recovery	•		
5			0.25/5	EL	(0.5-5	.0) Sandy CLAY.				
3 —		0.5	0.5/5	M L	(5.0-10.0) Sandy SILT, brown, wet, ~20 to 30% fine-grained sand, ~70 to 80% low plasticity silt.					
10 —		0.1 0.1	5/5	SM	(10.0-14.4) Silty clayey SAND, brown, wet, ~10 to 20% medium plasticity clay in thin (<0.5") interbeds, 20 to 30% low plasticity silt, ~50 to 80% fine-grained sand, soft.					
15		0.1 0.2	5/5	SP.	fine-g	19.2) SAND, poorly graded rained sand, soft; black, na	atural organic material loca	ally.		
20		0.6		Çr/	bedde	20.5) CLAY, grayish-brown d, soft.				
25 —			5/5	ÇL	sand,	26.2) Sandy CLAY, grayish ~70 to 80% medium plastic gs and slough from inside o	city clay, very soft, barrel	filled with		
		44.1	2.5/5	SP		29.0) SAND, grades to poorained to fine-grained sand,		et, very		
30 —		14.2	3/5	SP	plastic	35.0) Poorly graded SAND sity clay in sand locally, ~9 ragments throughout.	and clayey SAND, wet, ~ 0% fine-grained to mediur	10% high n-grained sand		
35 —		0	2/5	SP	(35.0- fine-g	40.2) SAND, poorly graded ained sand, compact, gray	, brown, wet, very fine-gra below 39.0.	ined to		
+0		1		ÇH	(40.2-	41.7) CLAY, gray, wet, high	n plasticity clay, soft.			
	DRW	•		Il Materials			ular Materials 0.0) Bentonite chips, inside 10)" casing		

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(0.0-20.0) Surface Casing, 14" sch. 40 PVC (0.0-48.8) Surface Casing, 10" sch. 40 PVC (0.0-64.0) Casing, 2" sch. 40 PVC (64.0-74.0) Screen, 2" sch. 40 PVC, 0.01" slot (74.0-74.3) End Cap

(0.0-10.0) Bentonite chips, inside 10" casing (0.0-20.0) Cement/Bentonite slurry, outside 14" casing (0.0-48.8) Cement/Bentonite slurry, outside 10" casing (10.0-58.3) Cement/Bentonite slurry, inside 10" casing (58.3-62.0) 3/8" bentonite chips (62.0-76.0) 16/30 silica sand (76.0-80.0) Coated bentonite pellets

	R, BEHLING & WH ulting Engineers and				L	og of Boring:	NE4MW32C			
G	ulfco Marine Mainte	nance		Completion	n Date:	06/13/08	Borehole Diameter (in.):	8.0/13.0/17.5		
0	Superfund Site			Drilling Cor	mpany:	Universal Drilling	Total Depth (ft):	80		
	Freeport, TX			Field Supe	rvisor:	Tim Jennings, P.G.	Northing:	3154802.32		
				Drilling Me	thod:	thod: Hollow Stem Auger Easting: 1355				
	PBW Project No. 1	352		Sampling I	Method:	5 ft. split spoon	Ground Elev. (ft. MSL):	3.2		
							TOC Elev. (ft MSL)	6.31		
Depth (ft)	Well Construction Diagram	(n-wdd) Old	Recovery (ft/ft)	USCS			thologic escription			
45 —		0.0	3/5	S	(41.7-45.8) Poorly graded SAND and clayey SAND, gray, wet, ~20% high plasticty clay, ~80% fine-grained sand.					
		9.2		CH	(45.8-4	7.1) CLAY, gray, wet, hig	h plasticity clay.			
			5/5	· · · · · · · · · · · · · · · · · · ·	(47.1-4	7.4) SAND, poorly graded	l, gray, wet, fine-grained to	o		
		0.9				n-grained sand interbedde	d in clay.			
50 —		0.0			(47.4-4	7.7) CLAY, gray, wet.		-		
			3/3	CL	fine-gra	55.0) Sandy CLAY, reddisl ained sand, ~90 to 95% m nts near top, very stiff an	h-brown with gray mottling, nedium plasticity clay, a fe	, ~5 to 10% ve w small shell		
55 —			2/2							
			2/2		(55.0-6	60.0) Silty CLAY, gray with	n local red mottling, moist,	~5 to 10% silt		
60 —		0.1	3/3	CH	very th at 57.0	nin interbeds and lenses, and tenses, and	a few silt lenses and thin (<0.1') interbed		
				CH	(60.0-6	60.5) CLAY, gray, ~20 to 3	30% shell fragments.			
65		0	5/5							
_		0.2		СН			y, moist, high plasticity, c to 68.0, a few shell fragme			
4			5/5		naturai	organio material at 02.0 l	to co.o, a low shell magnic	nito.		
_		0.5]					
70 —			 							
\dashv										
-		0.3	5/5	SHELL						
\dashv		0.0	0,0	CH	(72.7-7	3.0) SHELL layer, appear	s to contain some water.			
				11.	(73-73.	8) CLAY, similar to the m	aterial at 60.5 to 72.7.			
75 —										
-	フラブオー				(70.0.0	IO) OLANG Elect English	tar intoleration/Commission 19			
-		0.3	5/5	CH	(/3.8-8	i0) CLAY, bluish-gray, moi nts, very firm to stiff, thin	ist, high plasticity clay wit	n tew snell		
\dashv		5.5	5.0		Hayine	into, very mini to still, tillin	ו אוונ שכט מנ וו.ו.			
80				/////	1					

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Well Materials

(0.0-20.0) Surface Casing, 14" sch. 40 PVC (0.0-48.8) Surface Casing, 10" sch. 40 PVC (0.0-64.0) Casing, 2" sch. 40 PVC (64.0-74.0) Screen, 2" sch. 40 PVC, 0.01" slot (74.0-74.3) End Cap

Annular Materials

(0.0-10.0) Bentonite chips, inside 10" casing (0.0-20.0) Cerment/Bentonite slurry, outside 14" casing (0.0-48.8) Cerment/Bentonite slurry, outside 10" casing (10.0-58.3) Cerment/Bentonite slurry, inside 10" casing (58.3-62.0) 3/8" bentonite chips

(62.0-76.0) 16/30 silica sand
(76.0-80.0) Coated bentonite pellets
This boring log should not be used separately from the original report.

			EELER, LL	С	Log of Boring	: NB4PZ01			
G	Sup	rine Mainte erfund Site eeport, TX		Drilling Company: E Field Supervisor:	07/21/06 Best Drilling Services, Inc. Len Mason, P.G. Direct Push	Borehole Diameter (in.): Total Depth (ft): Northing: Easting:	2 22 13554276.47 3154459.85		
	PBW Pr	oject No. 1	352	Sampling Method: 4		Ground Elev. (ft. MSL): TOC Elev. (ft MSL):	2.3		
Depth (ft)	PID (ppm-v)	Recovery (ft/ft)	USCS		Lithologic Description				
0 -			SC/SM	(0.0 to 0.7) Clayey very low plasticity to	silty SAND, brown, ver ouncohesive, dry.	y fine-grained, subrour	nded, quartz,		
2 —	0.5	3.1/4							
4 =	0.8								
6 -	0.8	3.6/4		(0.7 to 13.1) CLAY, brown and gray, slightly mottled, soft, medium plasticity					
8 —	0.9		CL	slightly moist, becoming soft and moist below 5.4; becoming very soft at 6.6; becoming very moist to saturated at 8.0; becoming mostly greenish-gray with some brown, moist to very moist, saturated in areas at 9.0.					
6 — 8 — 10 —	0.9	3.8/4							
12 -	0.9								
14 —		3.7/4	\$ 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						
16	1.3		·······································	(13.1 to 18.9) Slig uncohesive, satura	htly sandy clayey SILT, ited.	brown, and greenish g	gray, very soft,		
18	1.6	4/4	X * * * * * * * * * * * * * * * * * * *						
20 -	1.9		CL		NY, gray to olive gray, fir	rm, medium plasticity, s	lightly moist to		
22 —	1.7	2/2		dry, trace gravel.					
24 —									
26 —									
28 —									
30 -	Di	211/		Comments:					

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446 A temporary piezometer (screened interval 9 - 19 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists			Log of Boring: NC3PZ02				
G	ulfco Ma	rine Mainte	nance	Completion Date: 07/21/06	Borehole Diameter (in.):	2	
	Sup	erfund Site		Drilling Company: Best Drilling Services, Inc.	Total Depth (ft):	28	
		eeport, TX		Field Supervisor: Len Mason, P.G.	Northing:	13554519.81	
				Drilling Method: Direct Push	Easting:	3154398.52	
	DR\M Dr	oject No. 1	352	Sampling Method: 4 ft split spoon	Ground Elev. (ft. MSL):	2.9	
	FDVVFI	oject No. 1	332		TOC Elev. (ft MSL):		
Depth (ft)	(n-wdd) GId	Recovery (ft/ft)	uscs	Litholog Descript			
0 <u> </u>	0.6	3.6/4					
6 —	0.9	3.9/4	CE	(0.0 to 14.6) Silty CLAY, reddish-brown to brown, soft, low plasticity, slightly moist; becoming gray and reddish-brown to brown, slightly mottled at 3.0; becoming greenish-gray and brown, slightly mottled, very soft at 8.0.			
10 —	1.5	3.6/4			.,		
14 —		4/4	····MIL	(14.6 to 15.9) Clayey SILT, brown and gr	rayish-brown, saturated	, very soft,	
16 —	0.6			uncohesive.			
				(15.9 to 17.0) CLAY, gray, medium plasti	city, soft to firm, moist.		
18 —	1	3.8/4		(17.0 to 19.3) Silty CLAY, brown and gra	•	•	
20 📑	1.9			(19.3 to 20.0) CLAY, gray, some greenisk slightly moist.	h-gray, soft to firm, med	lium plasticity, /	
22 —	2	3.7/4	CL.	(20.0 to 22.5) Silty CLAY, brown and gra	y, very soft, uncohesive	e, very moist.	
24 -	1.4			(22.5 to 28.0) CLAV trace around around	nd alive brown mottled	l raddish brown	
26 —	1.1	3.8/4		(22.5 to 28.0) CLAY, trace gravel, gray a at 26.7 to 27.6, firm, slightly moist to dry,		i, ieduisti-bioWi	
28 -	1.7						
30 =							
			10	Comments:			

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Comments:

A temporary piezometer (screened interval 12.5 - 22.5 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists					Log of Bo	oring	: ND1PZ03		
G	Sup	rine Mainte perfund Site peport, TX		Drilling Company: I Field Supervisor:	07/21/06 Best Drilling Servic Len Mason, P.G. Direct Push	ces, Inc.	Borehole Diameter (in.): Total Depth (ft): Northing: Easting:	2 18 13554945.56 3154263.8	
	PBW Project No. 1352			Sampling Method: 4			Ground Elev. (ft. MSL): TOC Elev. (ft MSL):	2.2	
Depth (ft)	PID (ppm-v)	Recovery (ft/ft)	USCS			Lithologi Descripti	ic	_ 	
0 =				(0.0 to 1.2) Slighti quartz sand; firm,			wn; very fine-grained, y moist.	subrounded,	
2 —	6.2	2.9/4				,, <u> </u>			
4 —	10.5								
6 8 10	8.8	3.7/4							
8 —	25.2			(1.2 to 15.7) CLAY, brown and gray, slightly mottled, soft to firm, medium					
10	12.5	3.9/4		plasticity, slightly moist, very moist at 4.0, some black staining at 10.2, saturated and very soft at 12.0.					
12 —	44.7								
14 —	24.9	3.9/4							
16 —	17.9								
40	20.0	1/2		(15.7 to 18.0) CL/	AY, gray, firm, n	nedium p	lasticity, dry to slightly	moist.	
18 —	29.3		1XXX XXX						
20 —									
22 -									
24 —									
26 —									
28 —									
30 =		D X X 7		Comments:					

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446 A temporary piezometer (screened interval 5.5 - 15.5 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists				Log of Boring	: ND3PZ04		
G	Sup	rine Mainte erfund Site eeport, TX		Completion Date: 07/21/06 Drilling Company: Best Drilling Services, Inc. Field Supervisor: Len Mason, P.G. Drilling Method: Direct Push	Borehole Diameter (in.): Total Depth (ft): Northing: Easting:	2 20 13554698.81 3154524.94	
	PBW Pr	oject No. 1	352	Sampling Method: 4 ft split spoon	Ground Elev. (ft. MSL): TOC Elev. (ft MSL):	2.4	
Depth (ft)	PID (ppm-v)	Recovery (ft/ft)	USCS		Lithologic Description		
0 _				(0.0 to 1.1) Slightly sandy CLAY, gray, so subrounded sand; soft, low plasticity, slight		ne-grained,	
2 -	60.1	3/4	CL	(1.1 to 4.5) CLAY, gray, some olive-brown plasticity, slightly moist.	n, soft to slightly firm, m	nedium	
4 —				(4.5 to 6.5) Silty CLAY to clayey SILT, bro	own and gray mottled	von soft lov	
4 — 6 — 8 —	167	2.9/4	····CL/ML-	plasticity, very moist to saturated, slight of		very sort, low	
8 —	181		X X X				
0 —	170		**************************************				
10 —	304	3.5/4	* * * * * * * * * * * * * * * * * * *	(6.5 to 17.0) Sandy clayey SILT, brown; very fine-grained, poorly sorted, subrounded, quartz sand; uncohesive, saturated, odor.			
12 —	121		ML				
	121		* * * * * * * * * * * * * * * * * * *	subloulided, qualiz salid, uncollesive, sa	turated, odor.		
14 —	166	3.9/4	***************************************				
16 —	13		* * * * * * * * * * * * * * * * * * *				
			***	(47.0.1.00.0) OLAY I	<i>a</i>		
18 —	28.1	3.8/4	CL	(17.0 to 20.0) CLAY, brown, some gray, vodor, becoming greenish-gray, firm to med trace iron nodules at 19.0.	/ery soft, medium plast flium plasticity, slightly r	icity, moist, noist to dry,	
20 —	8.1			trace non nodules at 19.0.			
22 —							
24 —							
26							
28 —							
30							

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Comments:

A temporary piezometer (screened interval 7 - 17 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

		ING & WH	EELER, LLC I Scientists		Log of Boring	: NF1PZ05		
G	Sup	rine Mainte erfund Site eeport, TX		Completion Date: Drilling Company: Field Supervisor: Drilling Method:	08/01/06 Best Drilling Services, Inc. Tim Jennings, P.G. Direct Push	Borehole Diameter (in.): Total Depth (ft): Northing: Easting:	18 13555211 3154490.84	
PBW Project No. 1352				Sampling Method:		Ground Elev. (ft. MSL): TOC Elev. (ft MSL):	2.2	
Depth (ft)	PID (ppm-v)	Recovery (ft/ft)	uscs		Litholog Descript	jic		
2 —	3.1	1/4	CL	(0.0 to 6.2) Sandy CLAY, dark grayish-brown, moist, ~ 20% fine-grained sand ~ 80% medium plasticity clay, firm.				
4 —	4.9	2/4		con mediam placticity day, min.				
0 <u> </u>	5.8 4.8	3/4	SC/SM	(6.2 to 8.0) Silty clayey SAND, brown, wet, ~ 50% medium plasticity fines, ~ 50% very fine to fine-grained sand, soft.				
4 — 6 — 10 — 12 —	3.6	4/4	CH SM/SC	(8.0 to 9.7) Silty CLAY, gray to brown, wet, high plasticity, soft. (9.7 to 12.0) Silty clayey SAND, brown, wet, ~ 20% to 30% high plasticity fine				
12 =	1.3		СН	~ 70% to 80% very fine to fine-grained sand, soft. (12.0 to 13.4) Silty sandy CLAY, brown, wet, ~ 30% to 40% very fine-grained				
14 —	1.2	4/4	SM/CH	sand and silt, ~ 60% to 70% high plasticity clay, very soft. (13.4 to 16.7) Silty SAND and CLAY, brown, wet, ~ 20% to 30% high plasticity fines (thin clay interbeds), ~ 70% to 80% very fine to fine-grained sand, soft.				
18 —	1.3	2/2	CH/SP	(16.7 to 18.0) In (< 0.1 inch) beds	terbedded CLAY and SA and ~ 70% high plasticit	ND, ~30% poorly grade y clay, top of first confir	ed sand as thin ning clay.	
20 —								
22 -								
24 —								
26 —								
28 —							Ì	
30 -		<u>.</u>						

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Comments:

A temporary piezometer (screened interval 8 - 18 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists				С	Log of Boring	: NF3PZ06		
Gı	ulfco Ma	rine Mainte	enance	Completion Date:	07/31/06	Borehole Diameter (in.):	2	
		erfund Site	;	Drilling Company:	Best Drilling Services, Inc.	Total Depth (ft):	16	
	Fre	eeport, TX		Field Supervisor:	Tim Jennings, P.G.	Northing:	13554991.77	
				Drilling Method:	Direct Push	Easting:	3154813.75	
	PBW Project No. 1352			Sampling Method:	4 ft split spoon	Ground Elev. (ft. MSL):	2.5	
— т						TOC Elev. (ft MSL):		
Depth (ft)	PID (ppm-v)	Recovery (ft/ft)	USCS		Litholog Descript			
0 –	2.6							
2	1.8	4/4		(0.0 to 4.8) Silty abundant roots, f	CLAY, dark brown to gra firm.	y, moist, medium plasti	icity fines,	
6 —	2.3	2/4						
8 =			CL	(4 9 to 12 1) Silh	ot 200/ to 400/_fine	oond = 60% to		
2 4	1.3 2.7	4/4		(4.8 to 13.1) Silty sandy CLAY, brown, wet, \sim 30% to 40%, fine sand, \sim 60% to 70% medium plasticity fines, very soft.				
12 -	4.5			(40.4 (44.7), 0"	W 01 AV 1			
14	4.7	4/4	СН	clay.	ity CLAY, brown, moist, h			
16 —			SW.	(14.7 to 16.0) We sand with shell fra	ell-graded SAND, brown, agments.	wet, very fine to mediu	ım-grained	
18 —								
20 =								
22							;	
24 -								
26								
28								
30 –				Comments:				

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Comments:

A temporary piezometer (screened interval 3 - 13 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

		ING & WH	EELER, LLC I Scientists	Log of Boring	: SA4PZ07		
G	Sup	erine Mainte perfund Site peport, TX		Completion Date: 07/20/06 Drilling Company: Best Drilling Services, Inc. Field Supervisor: Len Mason, P.G. Drilling Method: Direct Push	Borehole Diameter (in.): Total Depth (ft): Northing: Easting:	2 24 13553911.84 3154746.34	
	PBW Pr	oject No. 1	352	Sampling Method: 4 ft split spoon	Ground Elev. (ft. MSL): TOC Elev. (ft MSL):	5.4	
Depth (ft)	PID (v-mdd)	Recovery (ft/ft)	USCS	Litholog Descript	gic	'	
2 —	0.5	3/4	SC CL SM/SC	(0.0 to 1.5) Clayey SAND, brown with strotrace gravel. (1.5 to 2.0) Silty CLAY, brown, reddish-bromedium plasticity, organic material at base (2.0 to 4.1) Clayey silty SAND; brown, gramottling, very fine-grained, subrounded, p	rown, some black, sligh e. ayish-brown, and reddis	tly mottled, soft	
4	0.6	3.5/4	CL	(4.1 to 8.0) CLAY, gray, soft to firm, medigreenish gray, and reddish brown at 5.4; silty sand lens (< 0.1 feet) at 5.4.	decayed plant materia um plasticity; becomes	l at 4.0. / mottled gray,	
8 —	0.6		SC/SM	(8.0 to 9.6) Clayey, silty SAND, grayish-bifine-grained, subrounded, poorly sorted s			
	0.8	3.9/4		basal contact.		/	
12 —	0.7	3.9/4					
16	0.6		CL	(9.6 to 24.0) Silty CLAY, reddish-brown with some light greenish gray, slightly mottled, soft, medium plasticity, moist; becoming more greenish-gray with some			
18	0.5	4/4		reddish brown and trace black at 10.5; be becoming greenish-gray with local areas of at 16.0; becoming dry and firm at 22.6.	coming readish-brown of reddish-brown, very s	at 14.9; soft, very moist	
20 -	0.7						
22 -	0.7	3.9/4					
24 —	1.1						
26 —							
28 —							
30			<u>(</u>	Comments:			

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

A temporary piezometer (screened interval 12 - 22 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

		ING & WH	EELER, LLO I Scientists	Log of Boring	: SD3PZ08			
G	Sup	rine Mainte erfund Site eeport, TX		Completion Date: 07/20/06 Drilling Company: Best Drilling Services, Inc. Field Supervisor: Len Mason, P.G. Drilling Method: Direct Push	Borehole Diameter (in.): Total Depth (ft): Northing: Easting:	2 28 13554214.87 3154926.63		
	PBW Pr	oject No. 1	352	Sampling Method: 4 ft split spoon	Ground Elev. (ft. MSL): TOC Elev. (ft MSL):	5.6		
Depth (ft)	PID (ppm-v)	Recovery (ft/ft)	USCS	Litholog Descripti				
0 -	 I		Fill	(0.0 to 0.5) GRAVEL with sand.				
2 —	1.1	3.5/4	CL	(0.5 to 2.4) CLAY, brown, greenish-gray a medium plasticity, slightly moist.	· -			
4 —	1.2		SM	(2.4 to 4.6) Silty SAND, light brown, sand sorted, mostly quartz, unconsolidated, slig base.				
6 —	1.9	4/4		(4.6 to 8.7) CLAY, dark gray to dark greenish-gray, some reddish-brown, slightly mottled, soft, medium plasticity, slightly moist, trace root material.				
8 —	2		CL					
6 8 10 12 14	1.6	4/4		(8.7 to 9.8) Sandy silty CLAY, grayish-brown, soft, low plasticity, moist, some sand stringers, very thin, sand is very fine-grained and subrounded. (9.8 to 11.5) CLAY, gray and strong brown, mottled, soft, medium plasticity, moist.				
12 —	1.7		MŁ	(11.5 to 13.7) Clayey, sandy SILT, brown and brownish-gray, soft, unconsolidated, very moist to saturated, becoming saturated at 12.1.				
14 =	1.6	3.5/4	* * * * * * * * * * * * * * * * * * *					
16	1.5		* * * * * * * * * * * * * * * * * * *					
18	1.5	3.8/4	* * * * * * * * * * * * * * * * * * *	(40.745.05.5) Olimbaha alauma anada Oli T	·			
20 -	1.2		ML/SC·	(13.7 to 25.5) Slightly clayey, sandy SILT mostly quartz, unconsolidated, saturated, saturated at 21.9.				
22 -	1.1	3.7/4	**************************************					
24 -	1.6		** * * * * * * * * * * * * * * * * * *					
26 —	1.6	4/4	CL	(25.5 to 28.0) CLAY, greenish-gray and b	prown, mottled, firm, me	dium to high		
28 =	1.1			. ,, , , ,				
30				Comments:				

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Comments:

A temporary piezometer (screened interval 12 - 22 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

APPENDIX E

CPT PROFILES

CPT Data

Elevation



Client

 Job Number
 04.1908-0042

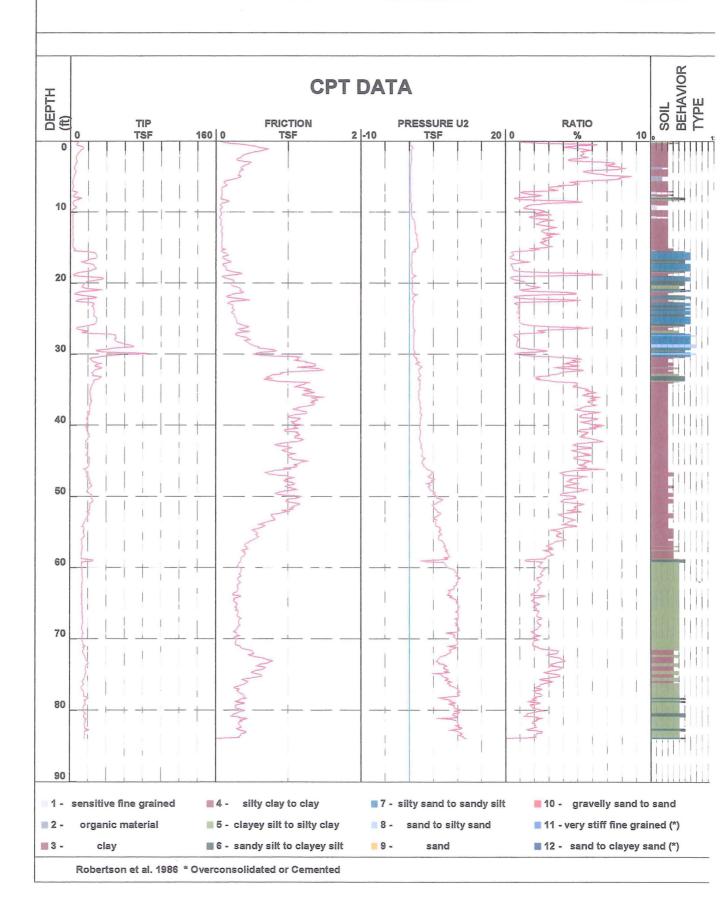
 Operator
 ALBERT FONSECA

CPT Number <u>NG3-CPT1</u>

Date and T 03-Jun-2008 08:55:23

Location <u>Gulfco Site-Freeport-TX</u>
Cone Number <u>A15F2.5CKEHW1636</u>

Water Table _____ 0.00 ft



CPT Data



Job Number 04.1908-0042

Operator ALBERT FONSECA

Client

CPT Number NC2-CPT3

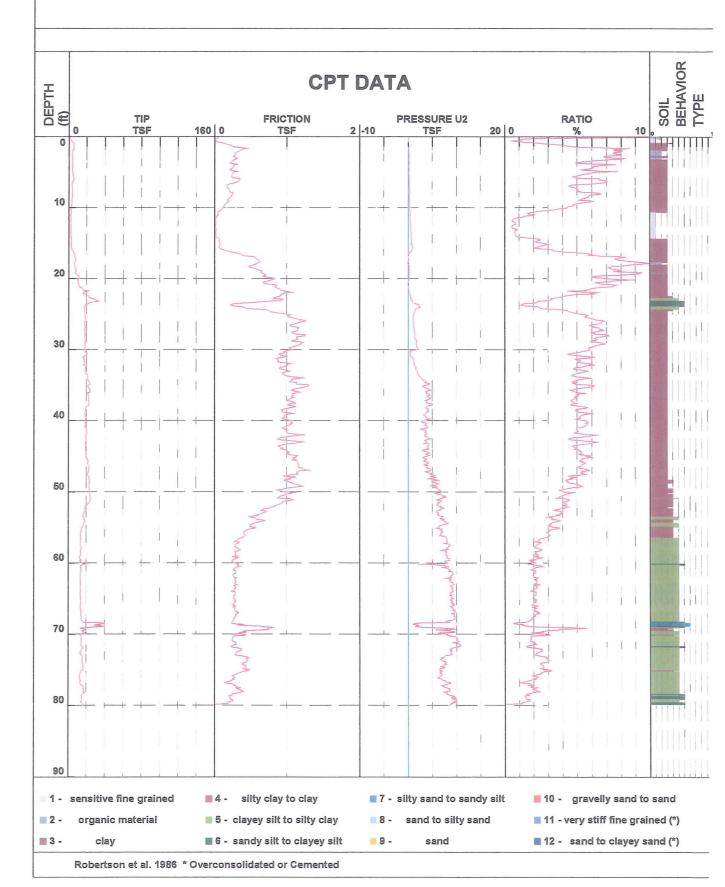
Date and T 02-Jun-2008 14:04:29

Elevation

Location Gulfco Site-Freeport-TX

Cone Number A15F2.5CKEHW1636

Water Table 0.00 ft



CPT Data

Elevation



Job Number 04.1908-0042 Operator **ALBERT FONSECA**

Client

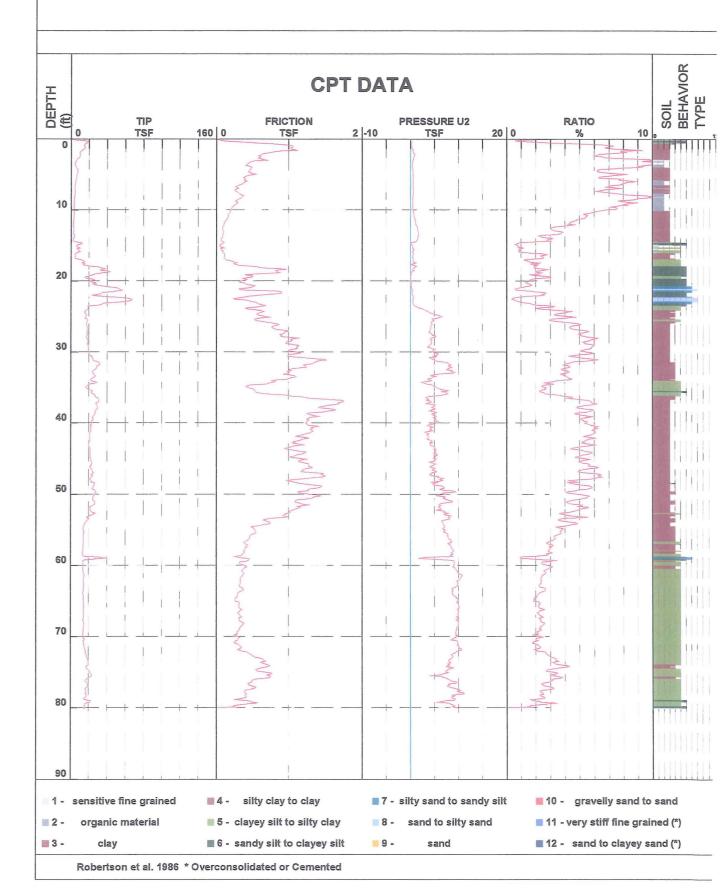
CPT Number OCPT-4 Date and T 03-Jun-2008 16:42:24

Location

Gulfco Site-Freeport-TX

Cone Number A15F2.5CKEHW1636

Water Table 0.00 ft



-fugro

CPT Data

Job Number 04.1909-0001

Robertson et al. 1986 * Overconsolidated or Cemented

CPT Number OCPT5

Location

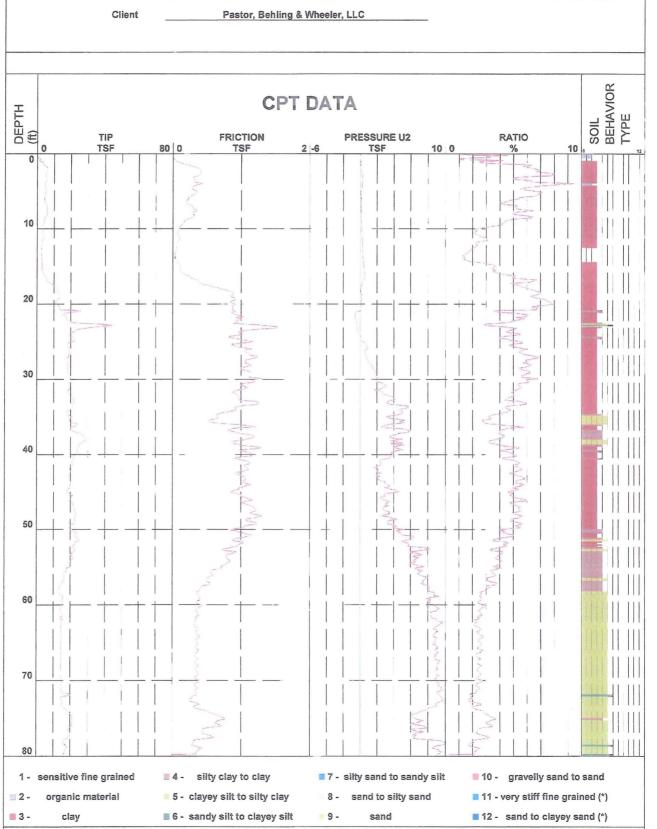
Gulfco-Freeport-TX

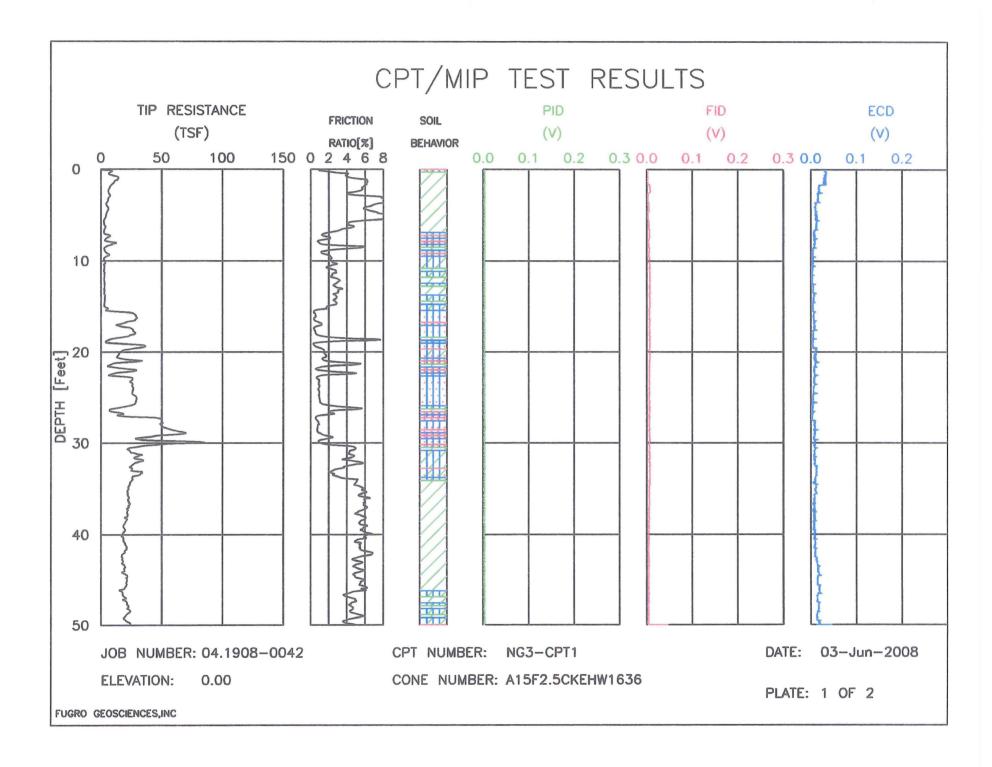
Operator

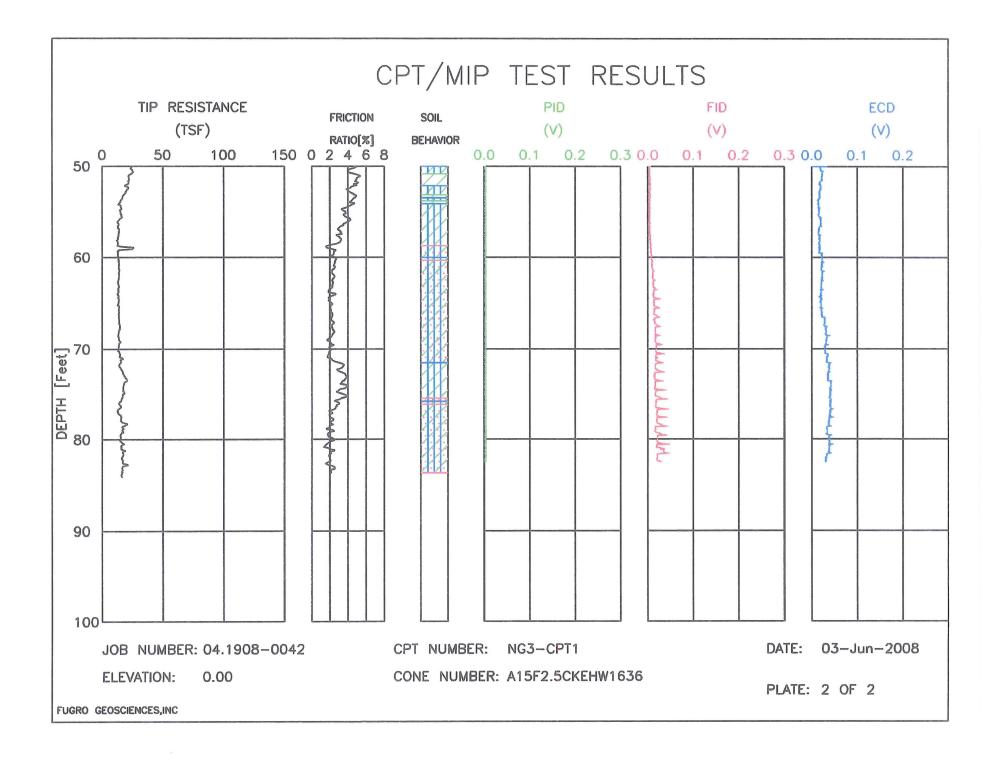
Albert Fonseca

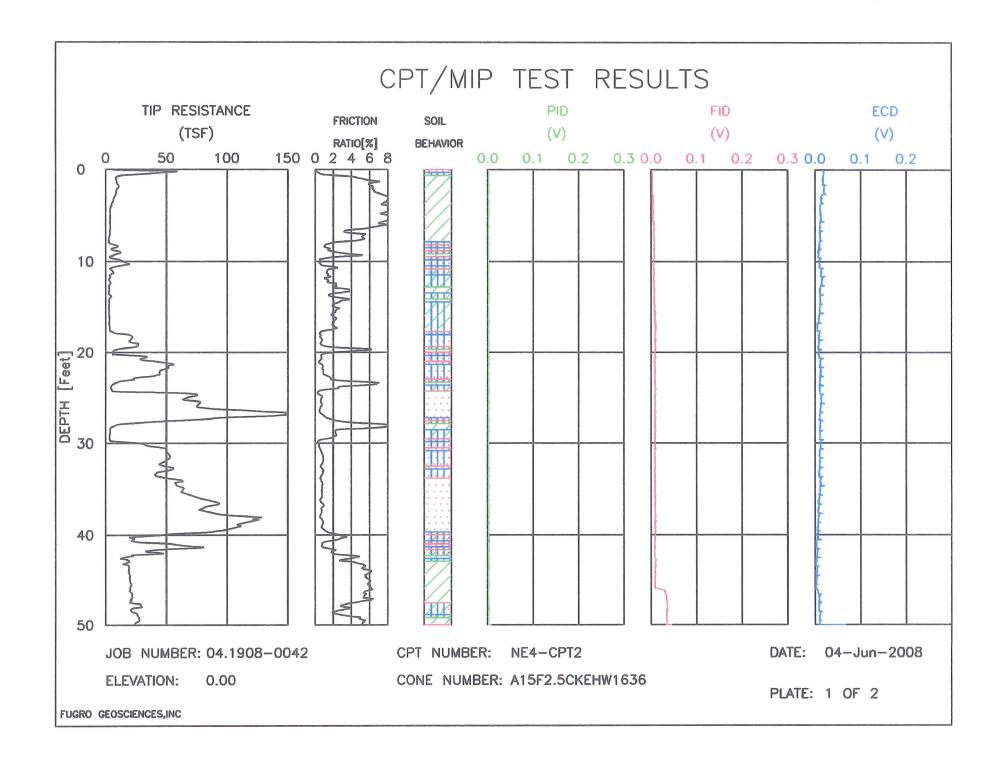
Date and Tin 07-Jan-2009 10:20:32

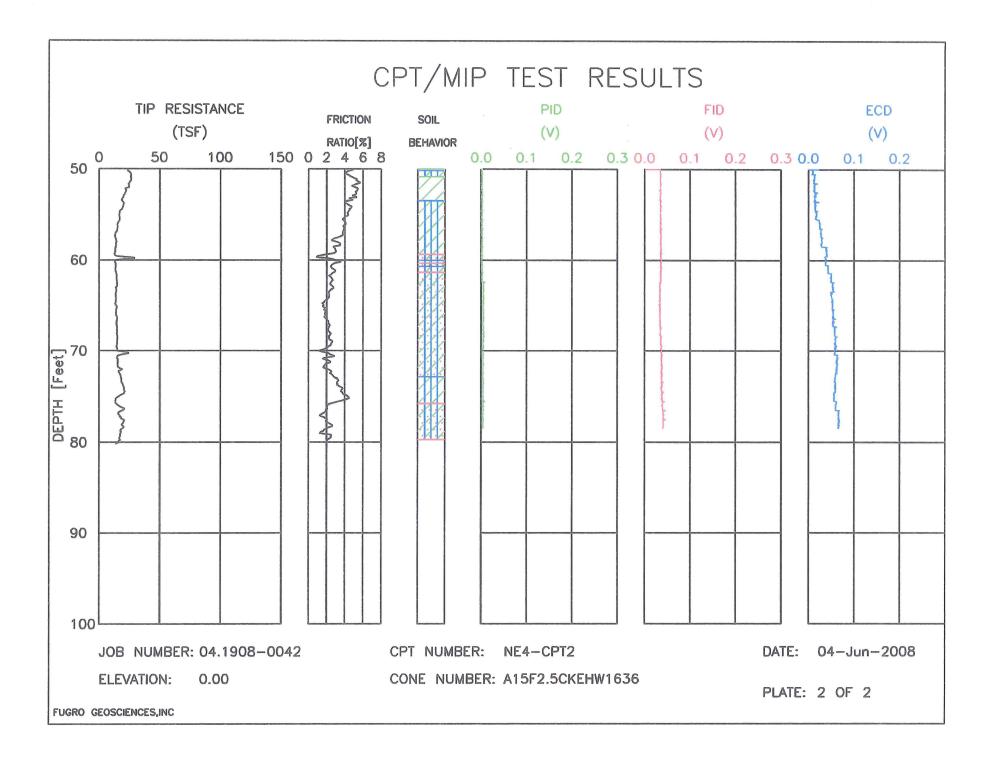
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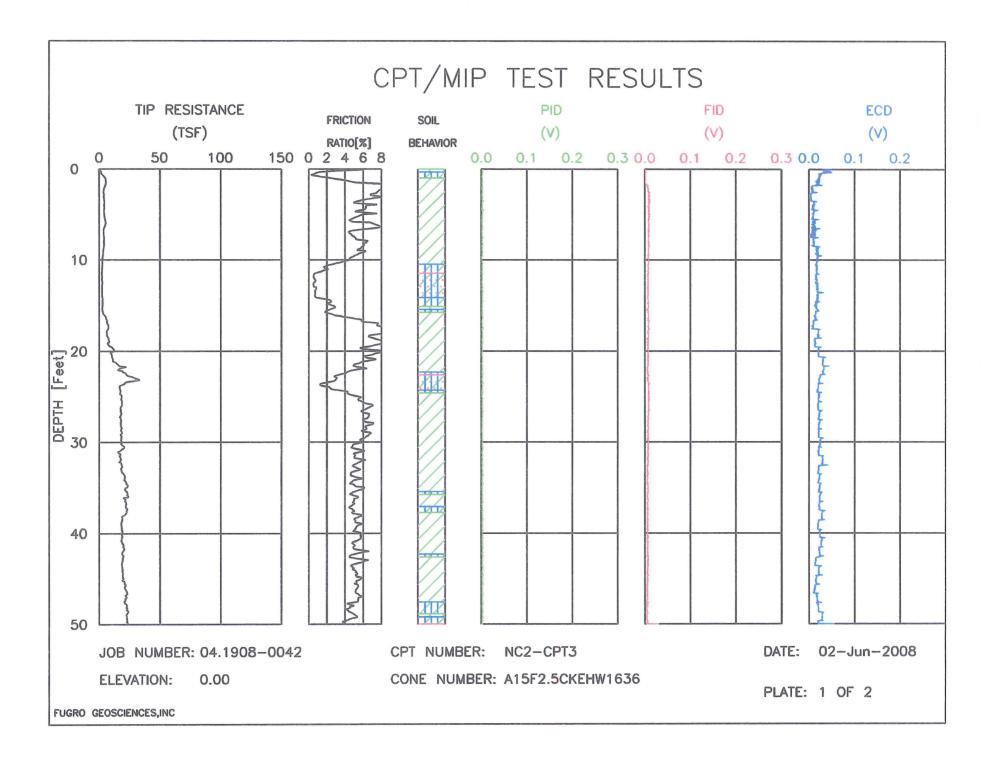


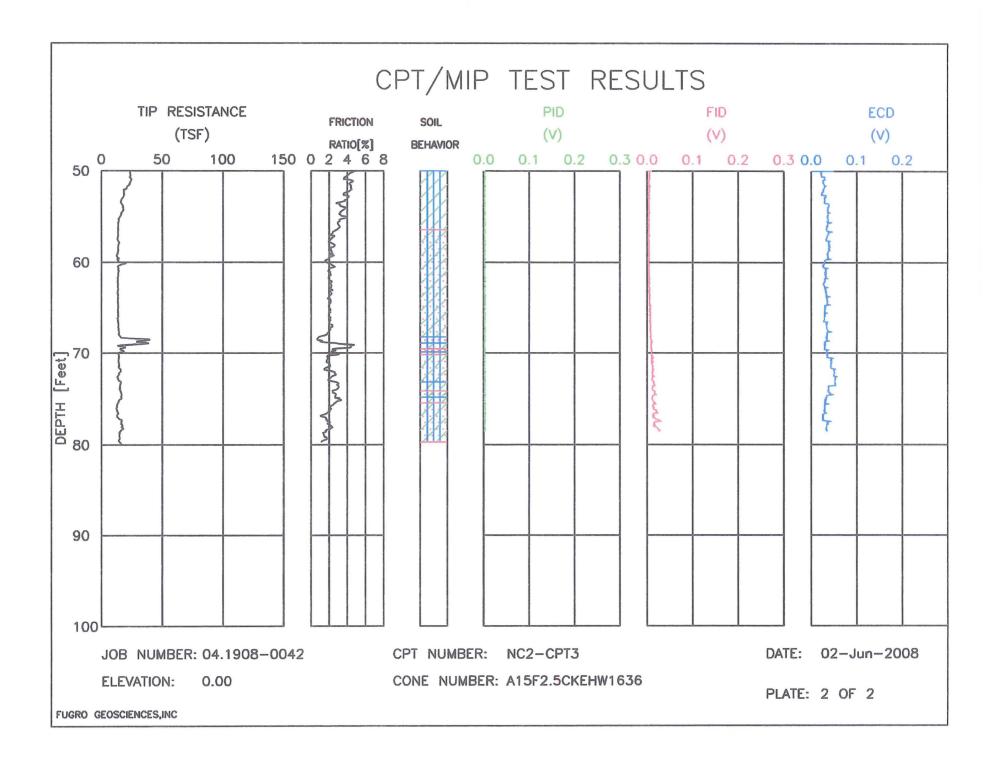


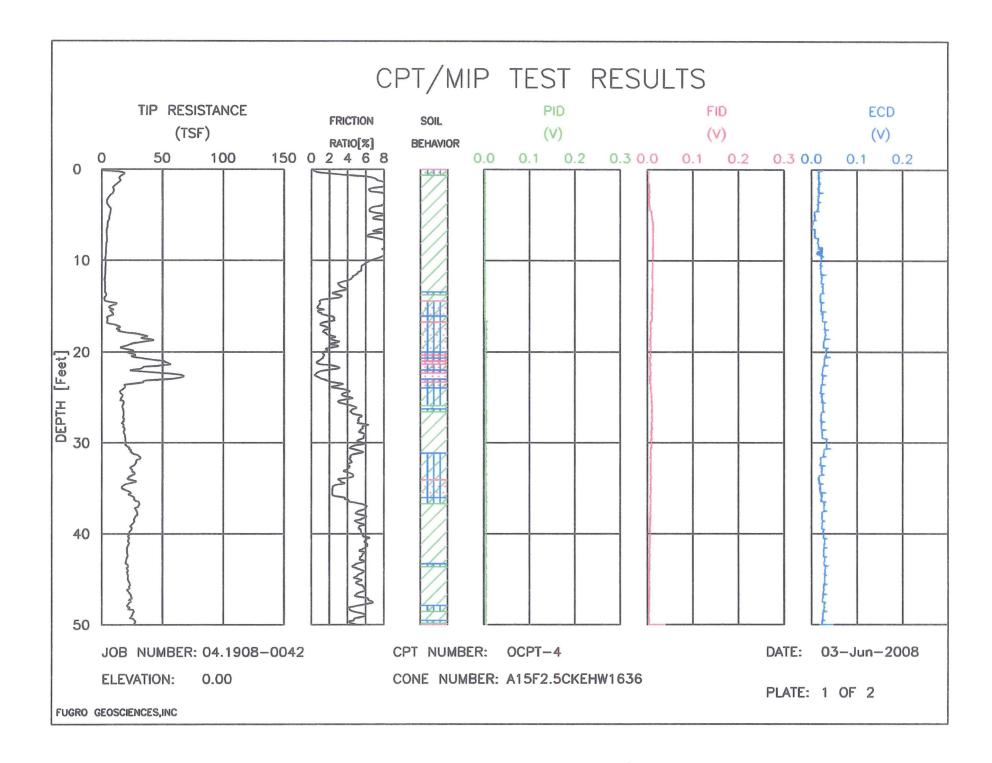


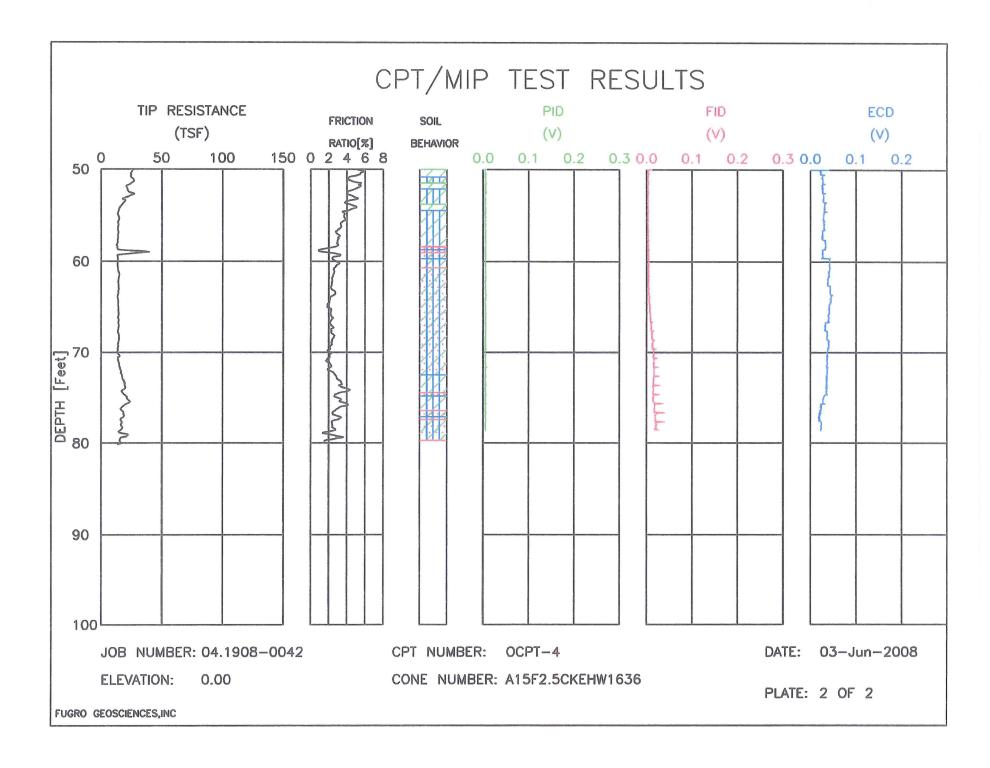


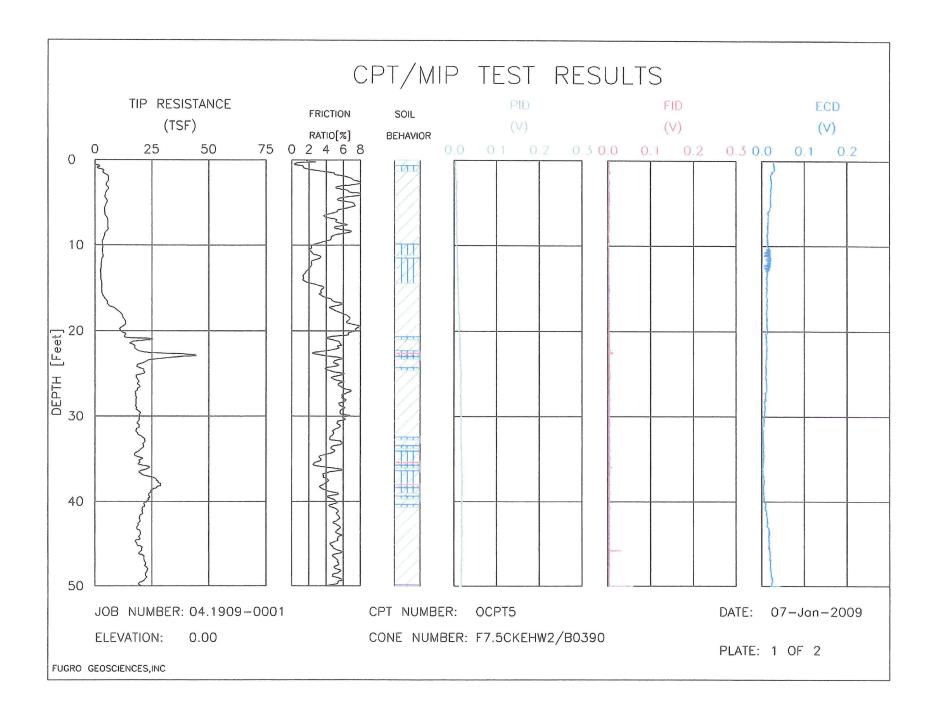


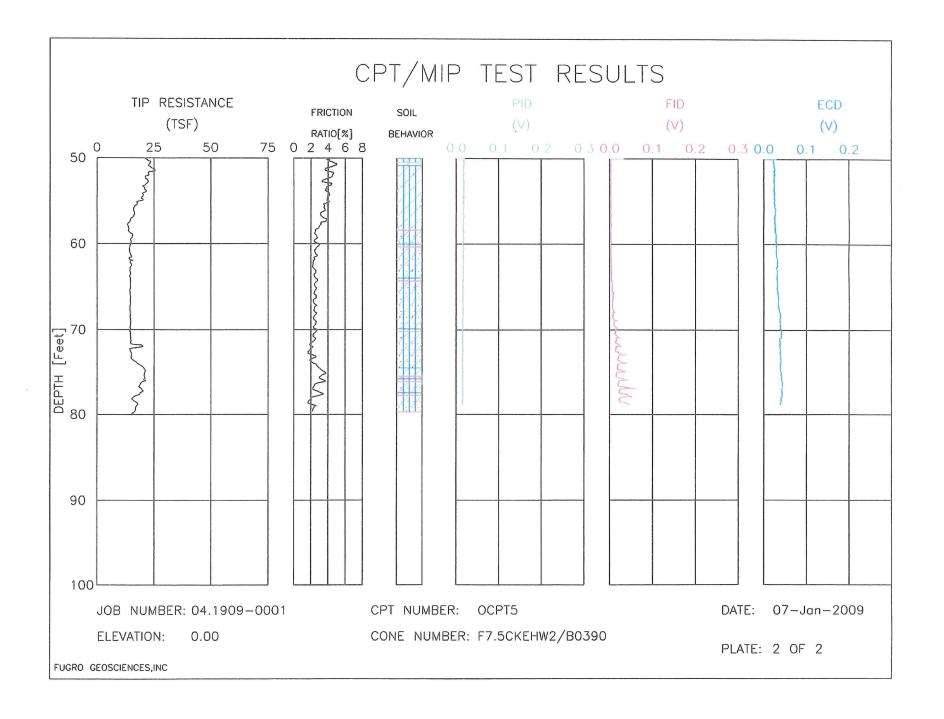


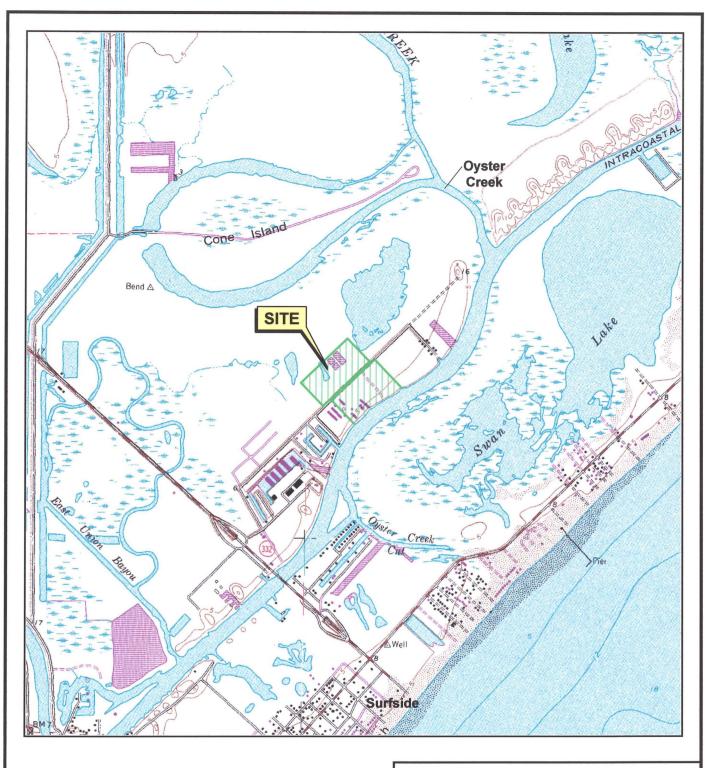


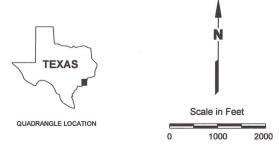












Source:
Base map taken from http://www.tnris.state.tx.us Freeport, Texas 7.5 min. U.S.G.S. quadrangle, 1974.

GULFCO MARINE MAINTENANCE

FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 1

SITE LOCATION MAP

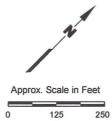
PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC



Gulfco Marine Maintenance Site Boundary (approximate)

— Lot Boundary (approximate)



GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

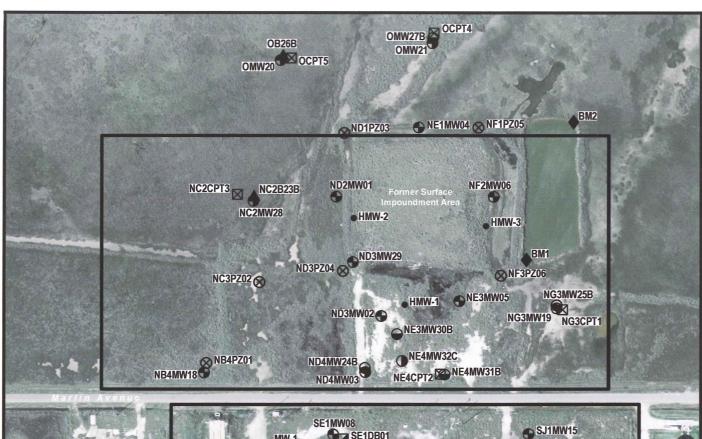
Figure 2

SITE MAP

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC

CONSULTING ENGINEERS AND SCIENTISTS





- Gulfco Marine Maintenance Site Boundary (approximate)
- Monitoring Well Location Zone A
- Temporary Piezometer Zone A
- Staff Gauge
- Previous Monitoring Well Location

- Monitoring Well Location Zone B
- Soil Boring Location Zone B
- Monitoring Well Location Zone C
- Deep Soil Boring Location

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 3

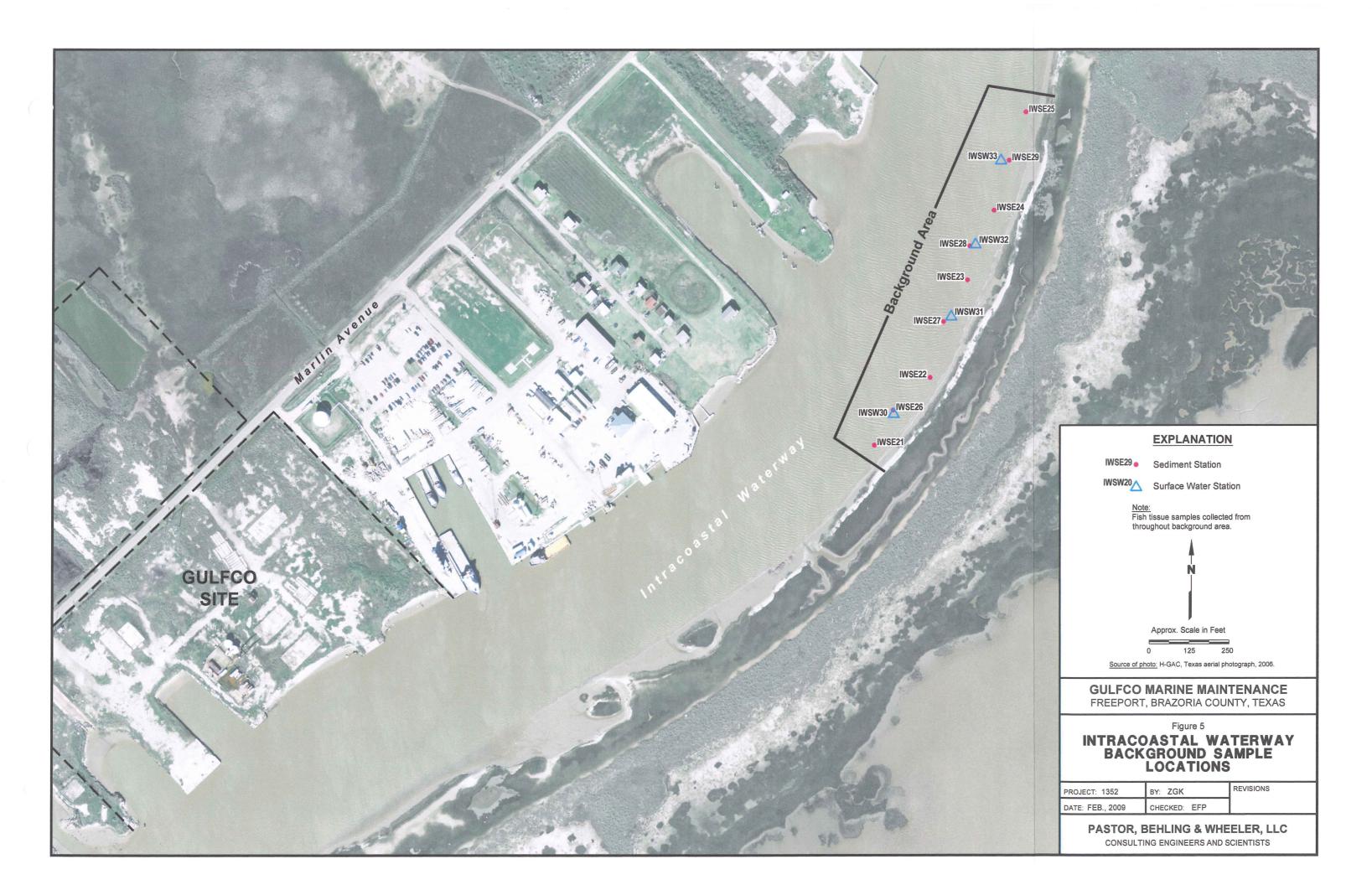
MONITORING WELL LOCATIONS

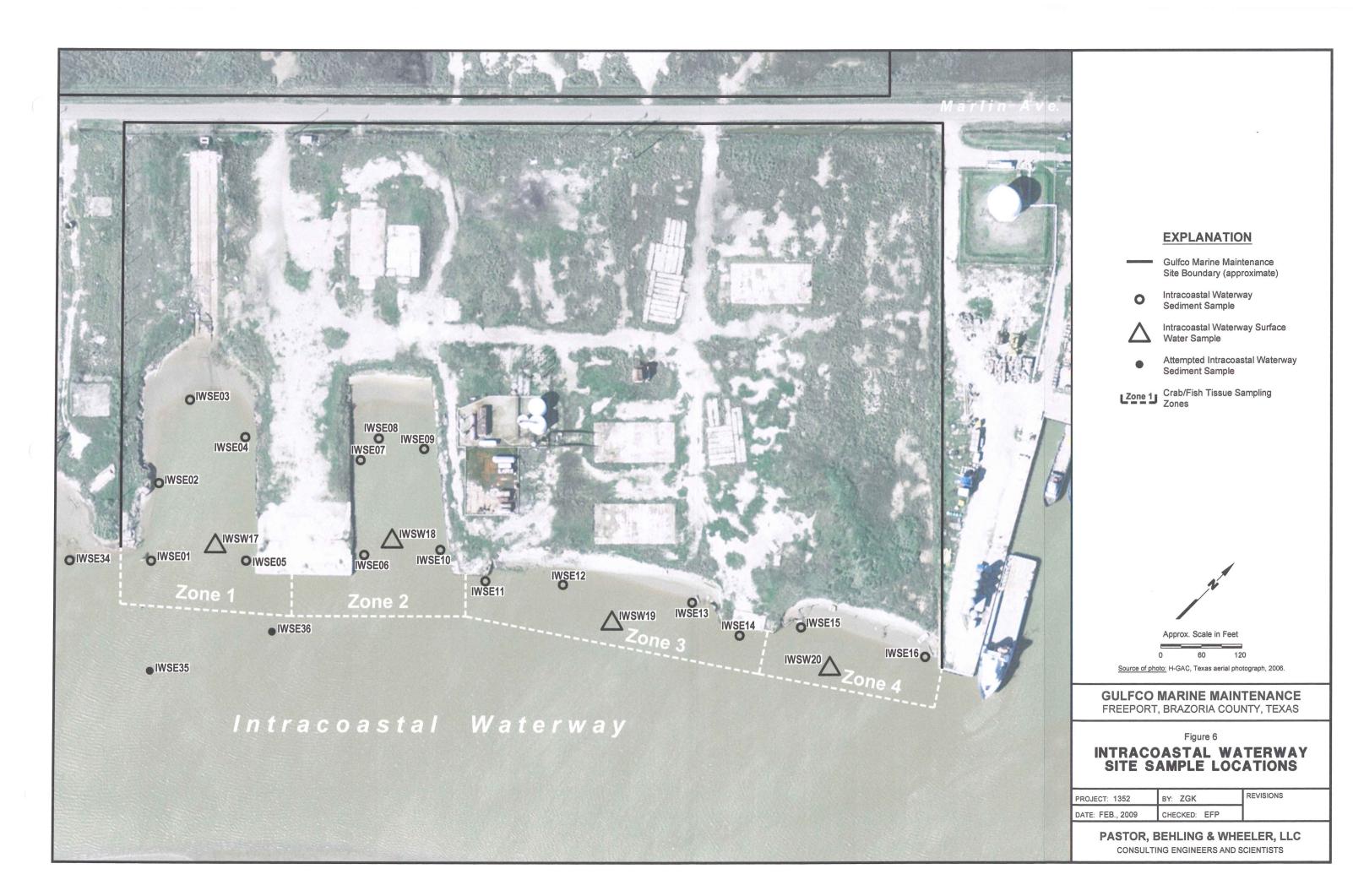
PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

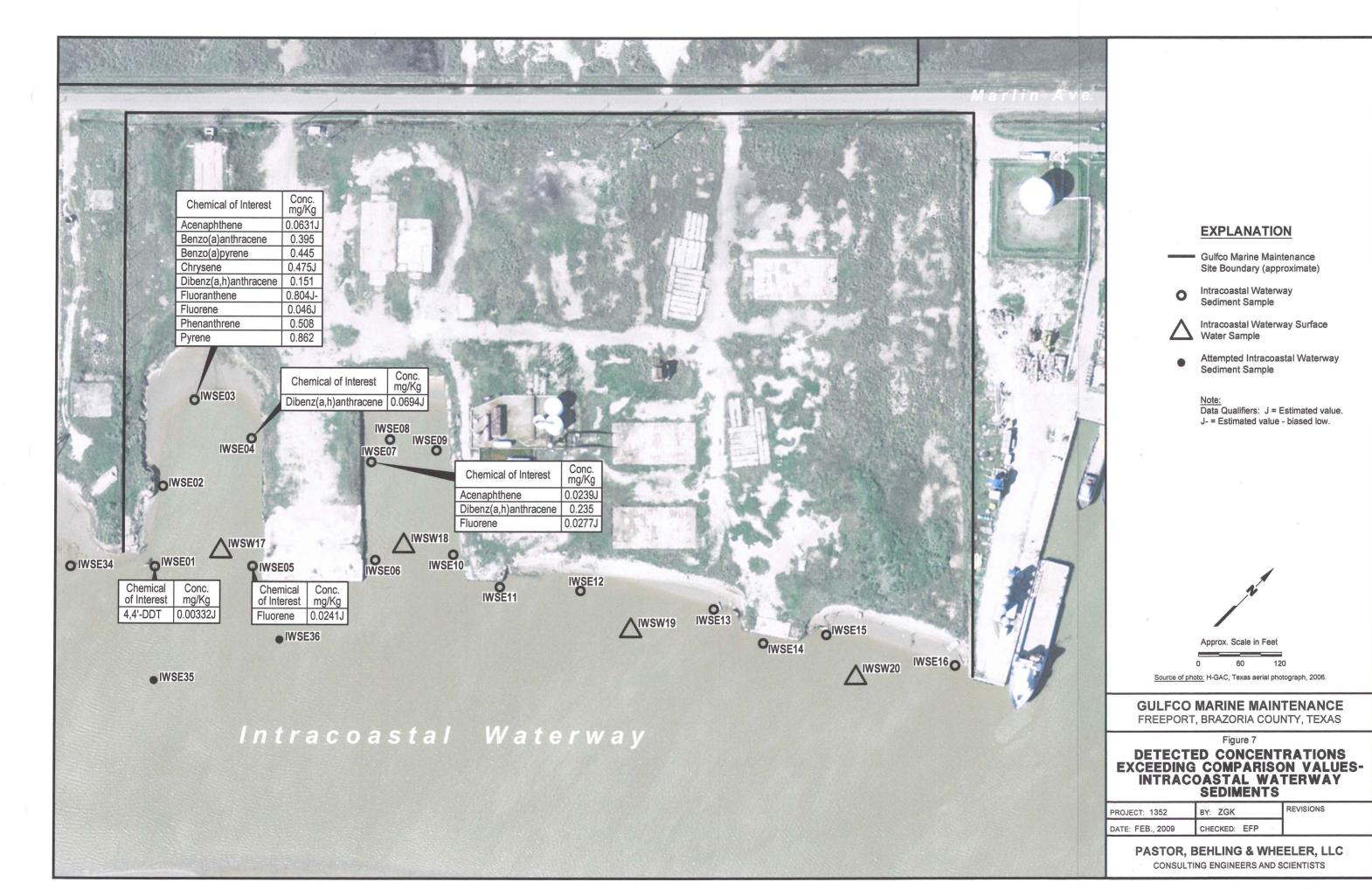
PASTOR, BEHLING & WHEELER, LLC

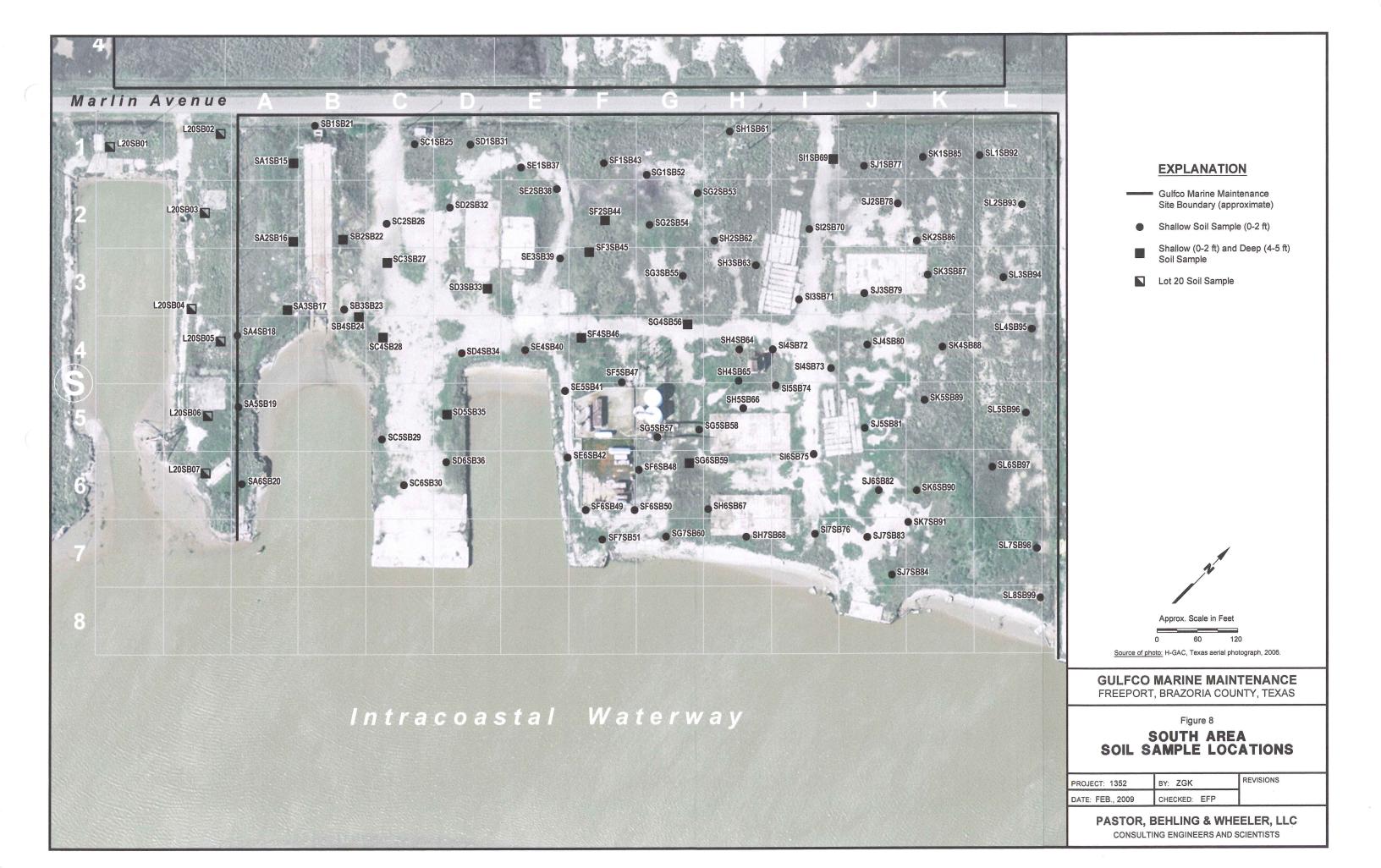
CONSULTING ENGINEERS AND SCIENTISTS

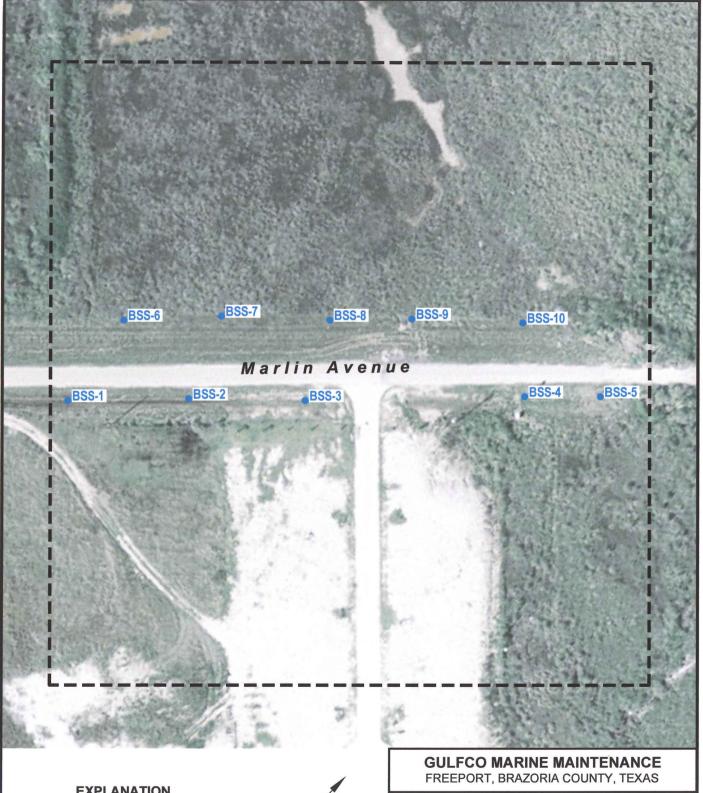












Background Soil Area Boundary (per Figure 8 of Field Sampling Plan)

BSS-1 Approximate Background Soil Sample Location

Background Area located approximately 2,000 feet east of Gulfco site.



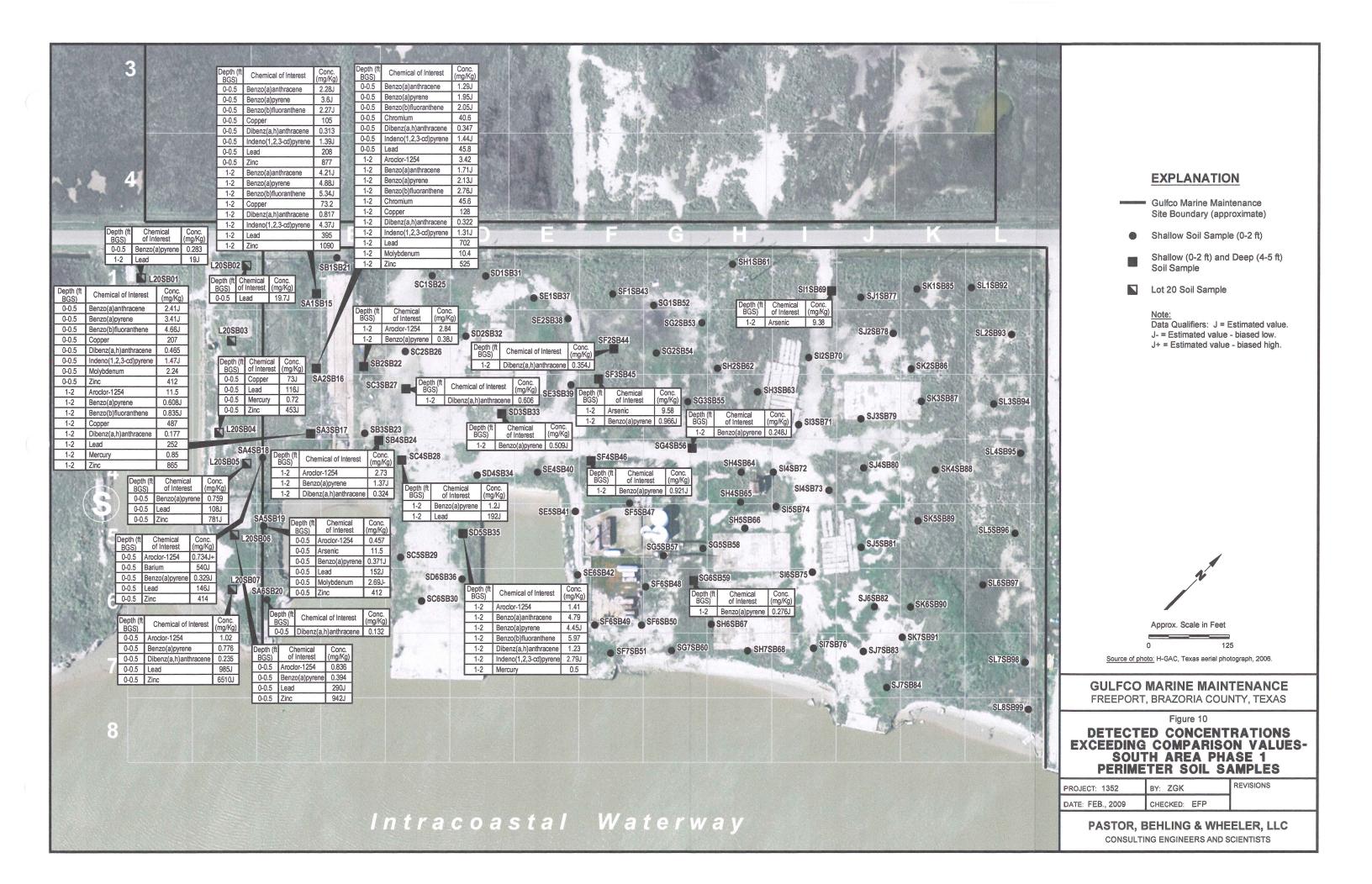
Source of photo: H-GAC, Texas aerial photograph, 2006.

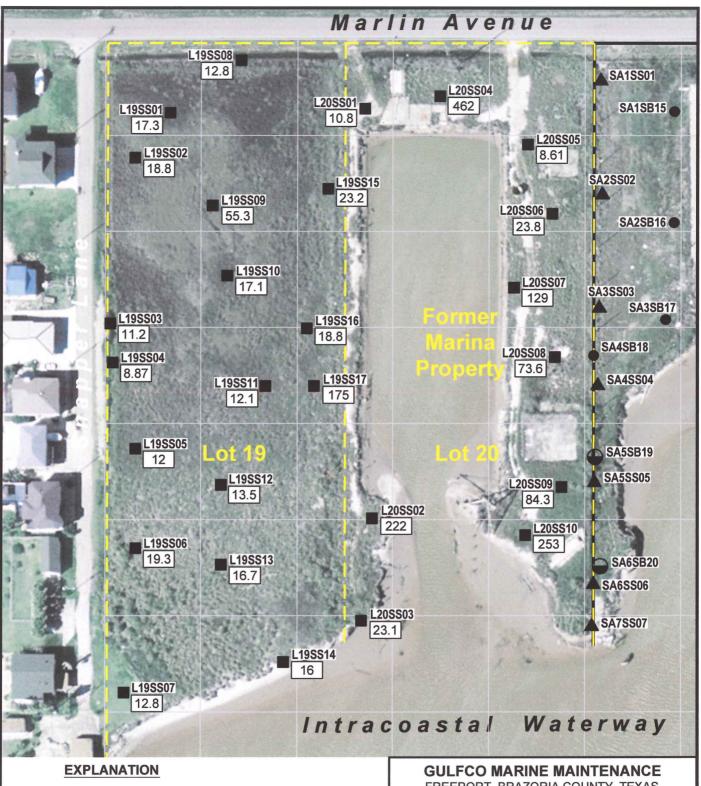
Figure 9

BACKGROUND SOIL SAMPLE LOCATIONS

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC



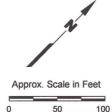


Gulfco Marine Maintenance Site Boundary (approximate)

Parcel Boundary (approximate)

- Judgmental Soil Sample (0-2 ft)
- Random Systematic Soil Sample (0-2 ft)
- Lot 21 Surface Soil Sample (0-1 in)
- Lot 19/20 Surface Soil Sample (0-1 in)

12.8 Lead Concentration (mg/Kg)



Source of photo: H-GAC, Texas aerial photograph, 2006.

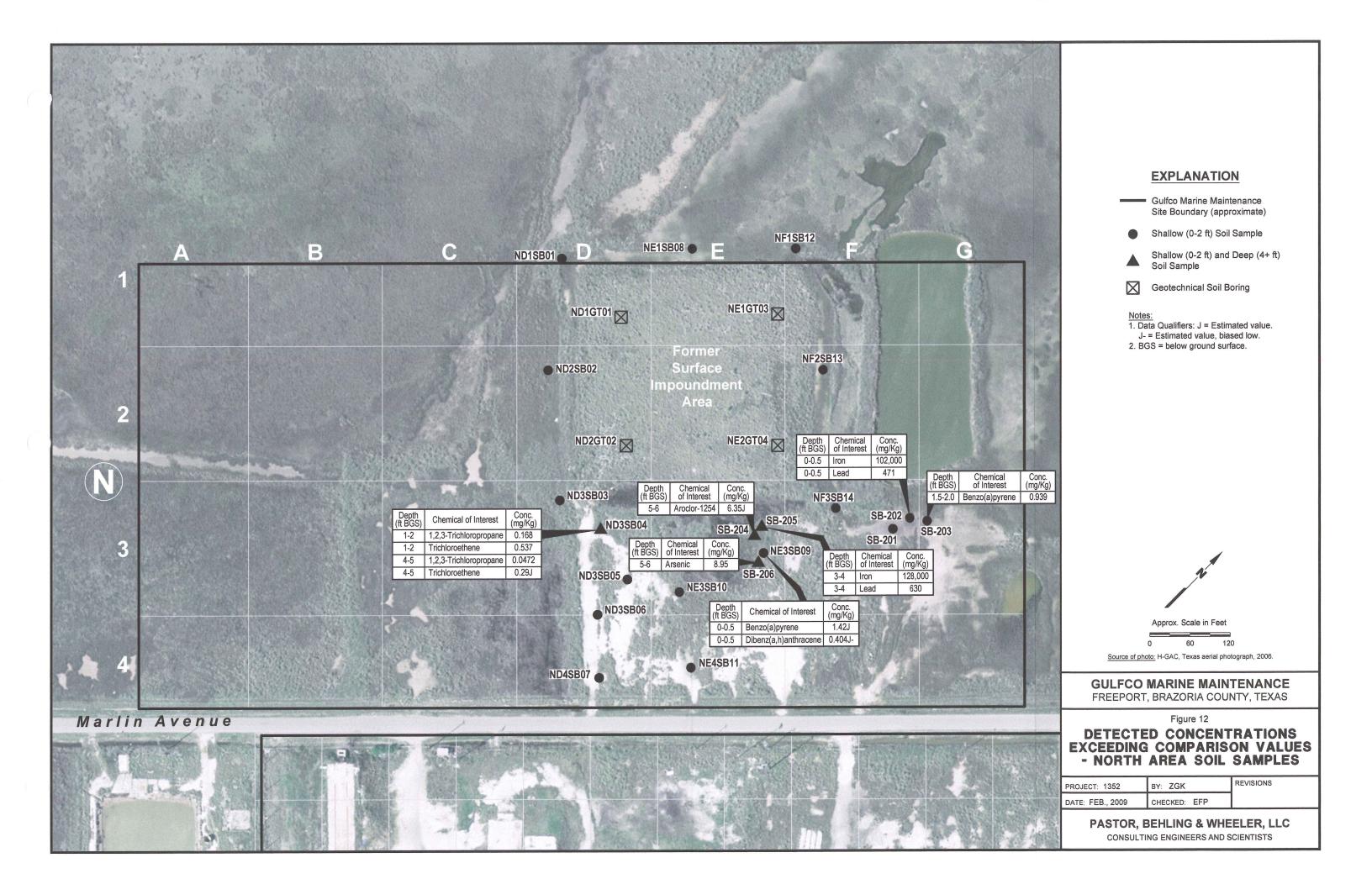
FREEPORT, BRAZORIA COUNTY, TEXAS

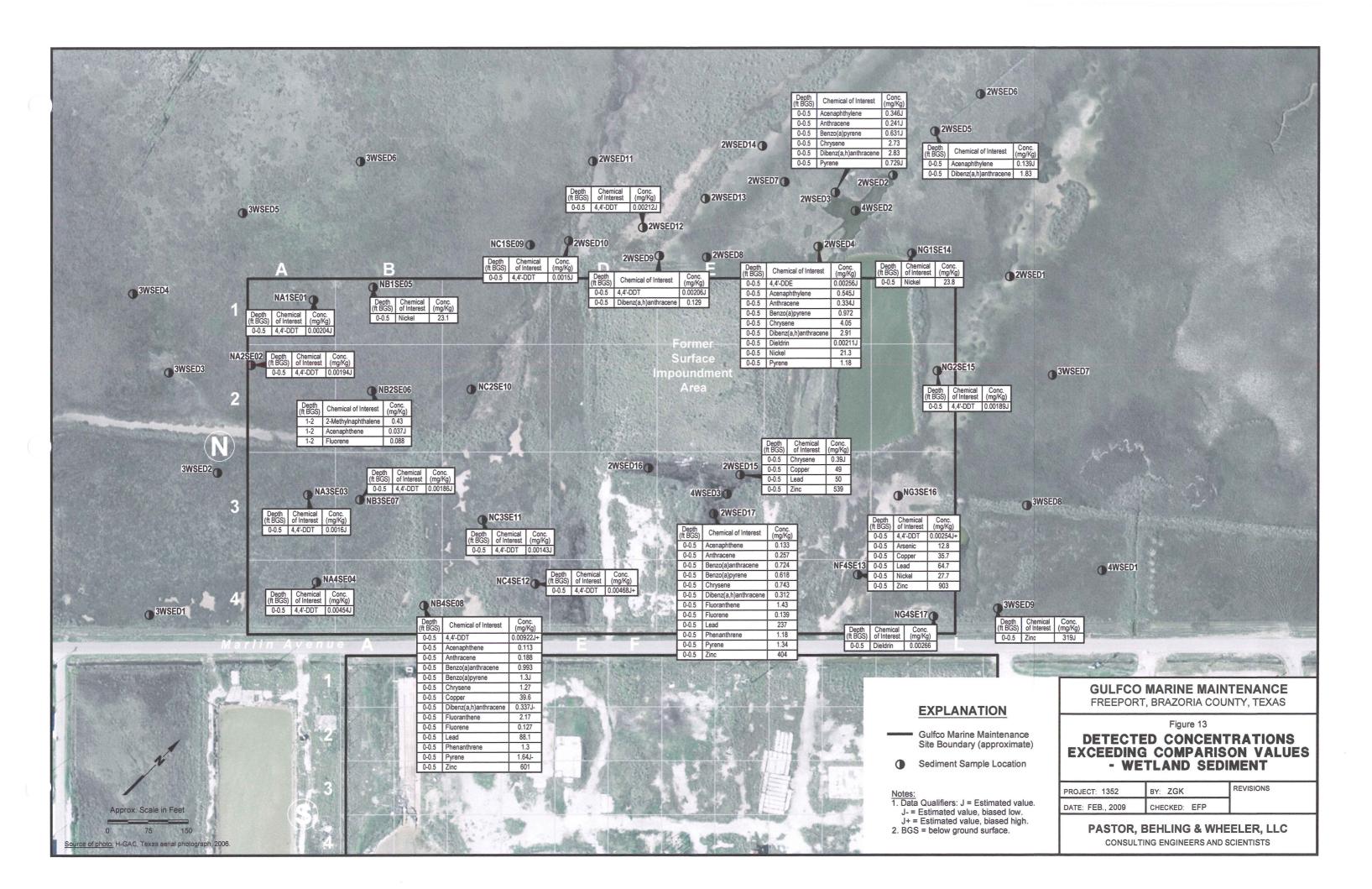
Figure 11

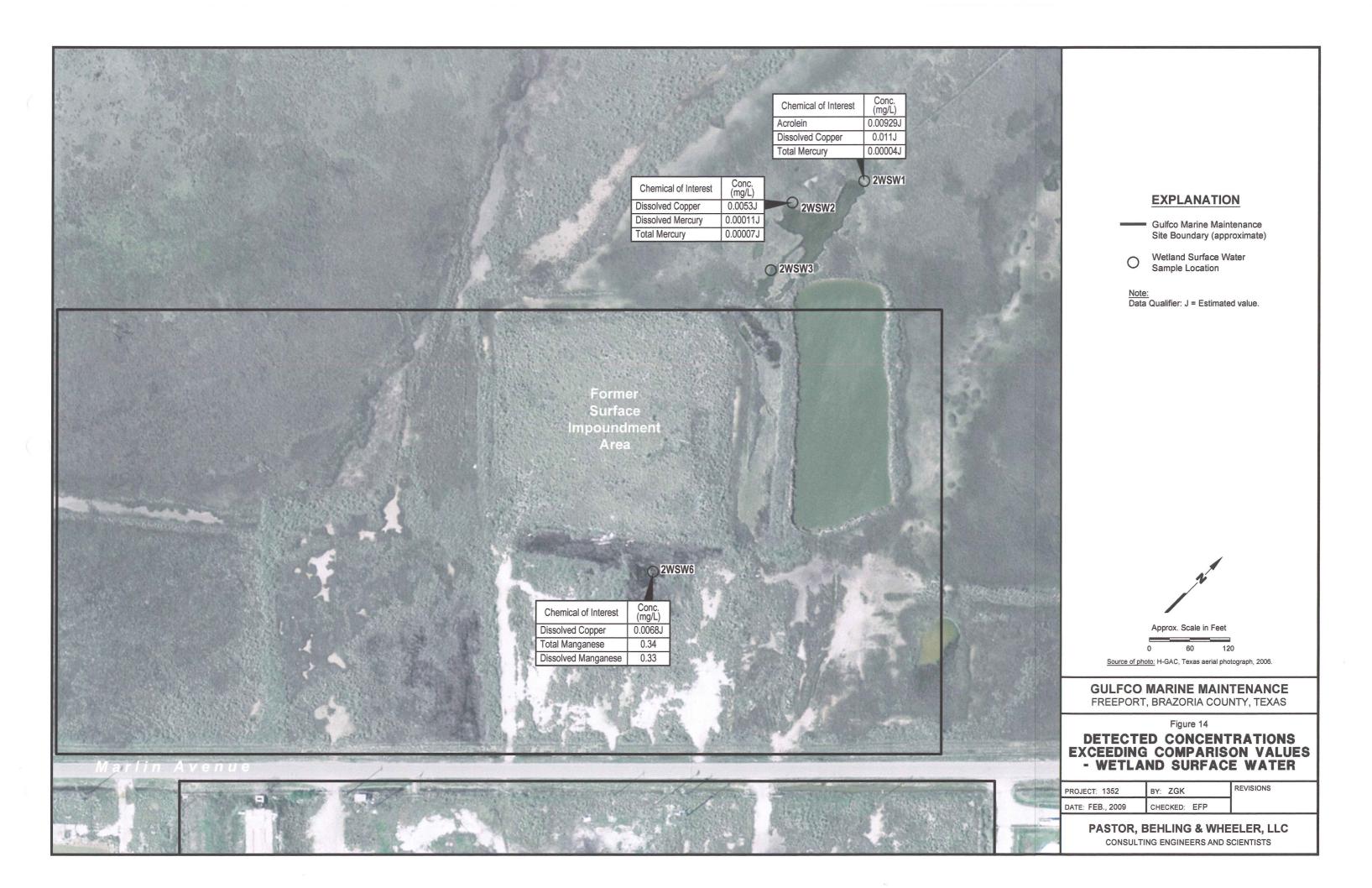
LEAD CONCENTRATIONS IN LOT 19-20 SURFACE SOIL SAMPLES

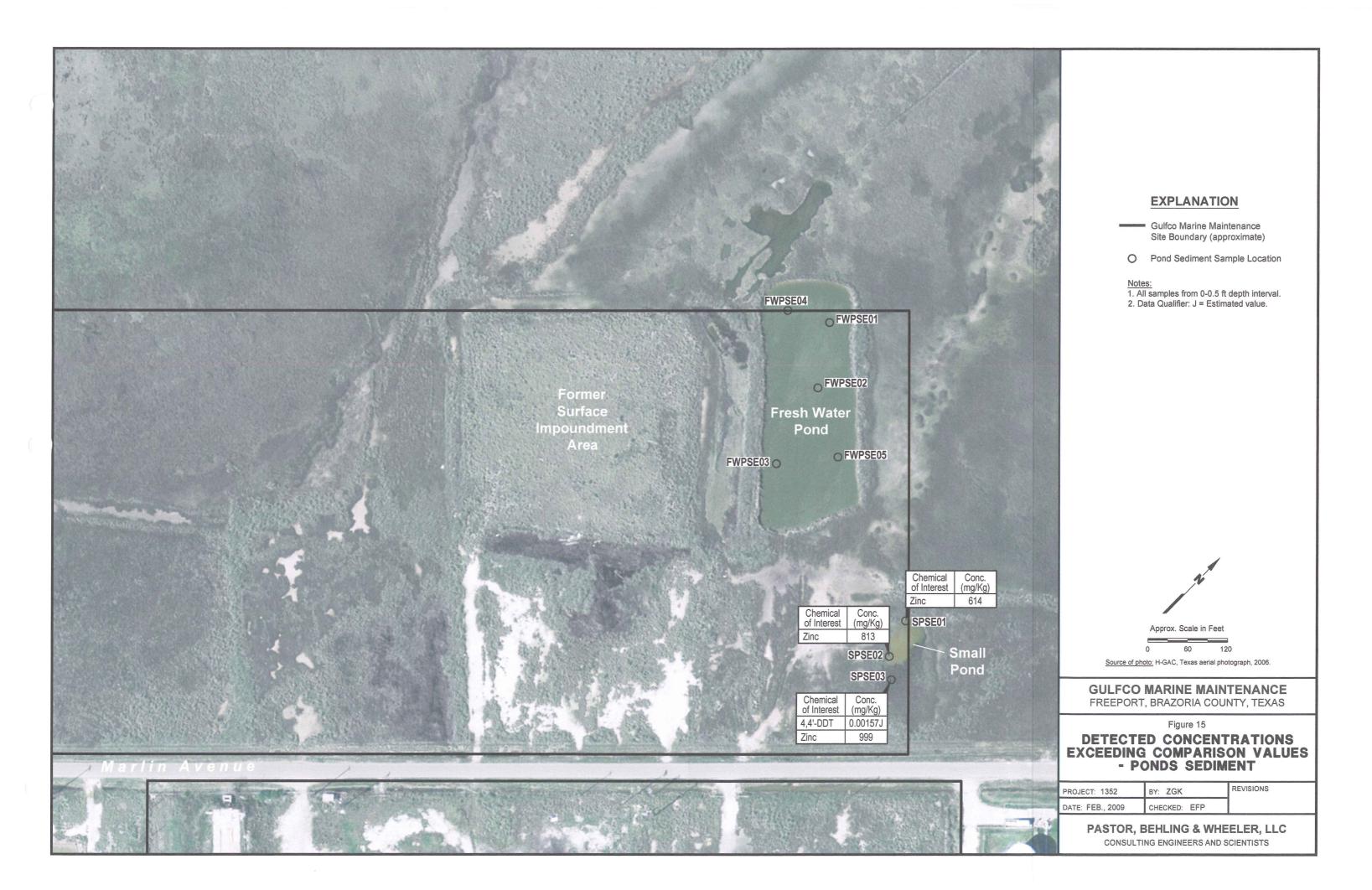
PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	1

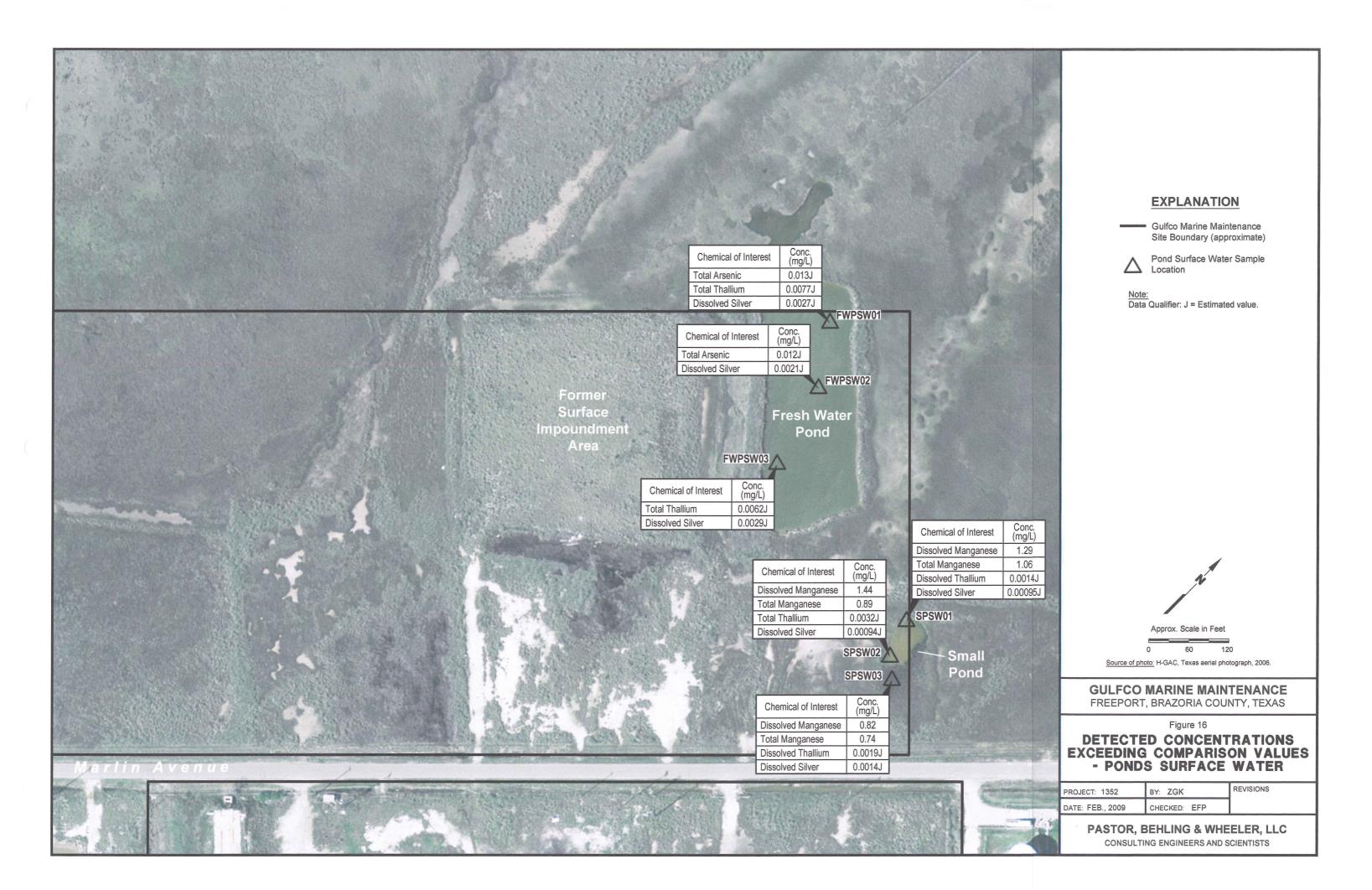
PASTOR, BEHLING & WHEELER, LLC

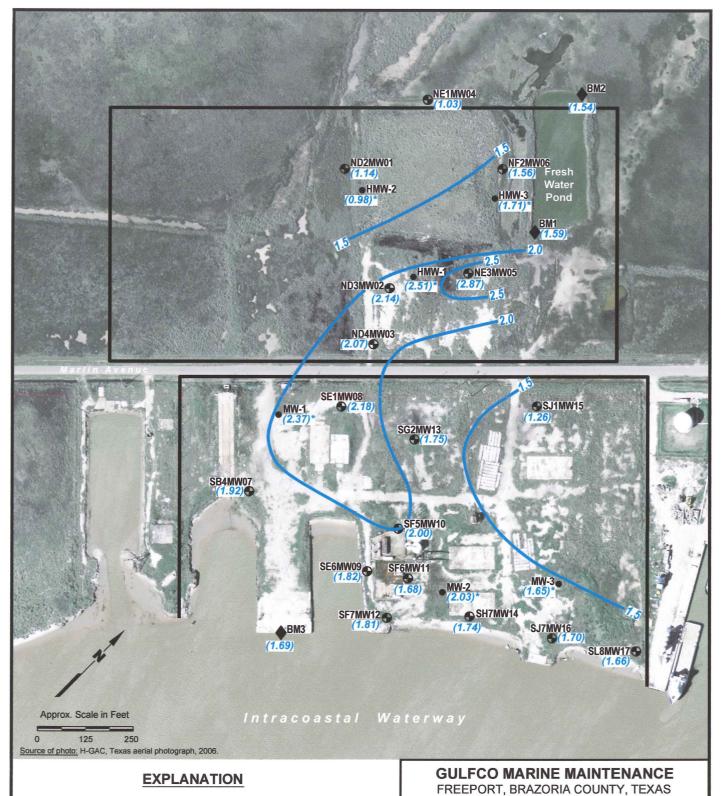












Gulfco Marine Maintenance Site Boundary (approximate) (1.69) Water-Level Elevation (Ft AMSL) Measured 10/05/06

Monitoring Well Location 1 Zone A

Elevation Not Used in Contouring

Previous Monitoring Well Location

-1.5- Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.5 Ft

Staff Gauge

Note: Previous monitoring well and staff gauge measurements

included for reference only and not used to construct

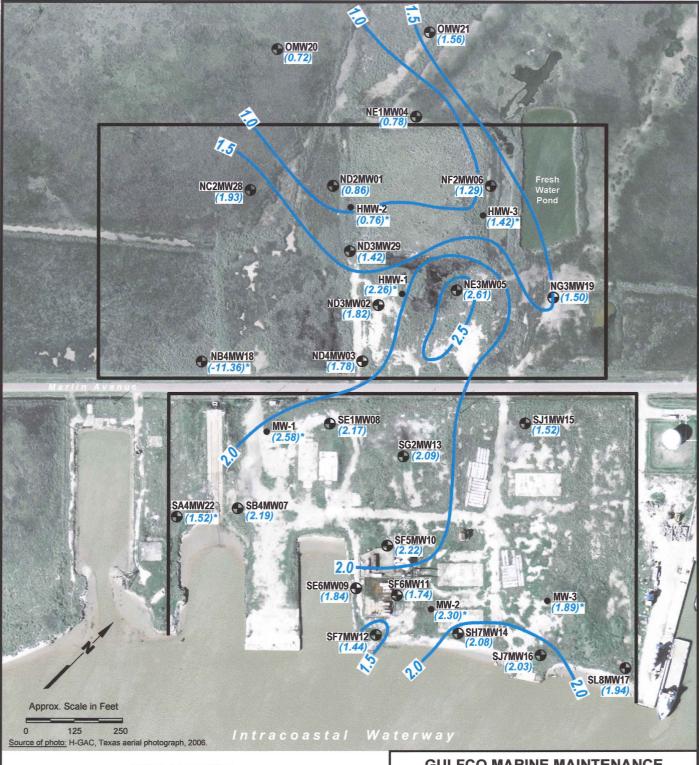
potentiometric surface contours.

Figure 17

ZONE A POTENTIOMETRIC SURFACE OCTOBER 5, 2006

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC



- Gulfco Marine Maintenance Site Boundary (approximate)
- Monitoring Well Location Zone A
- Previous Monitoring Well Location
- * Elevation Not Used in Contouring
- (1.44) Water-Level Elevation (Ft AMSL) Measured 06/06/07
- ■1.5■ Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.5 Ft

Notes:

Previous monitoring well measurements included for reference only and not used to construct potentiometric surface contours. Water-level elevation at NB4MW18 not used in contour due to insufficient recovery time from sampling. Staff gauge measurements not measured on this date.

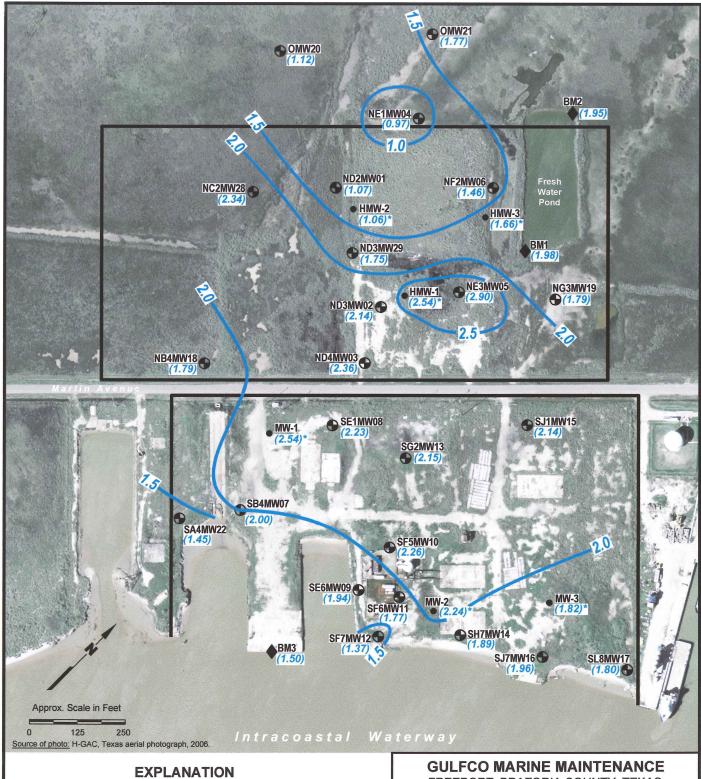
GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 18

ZONE A POTENTIOMETRIC SURFACE JUNE 6, 2007

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC



- Gulfco Marine Maintenance Site Boundary (approximate)
 - Monitoring Well Location Zone A
- Previous Monitoring Well Location
- Staff Gauge

(1.37) Water-Level Elevation (Ft AMSL) Measured 09/06/07

- Elevation Not Used in Contouring
- =2.0= Potentiometric Surface Contour (Ft AMSL)

Contour Interval = 0.5 Ft

Note: Previous monitoring well and staff gauge measurements included for reference only and not used to construct potentiometric surface contours

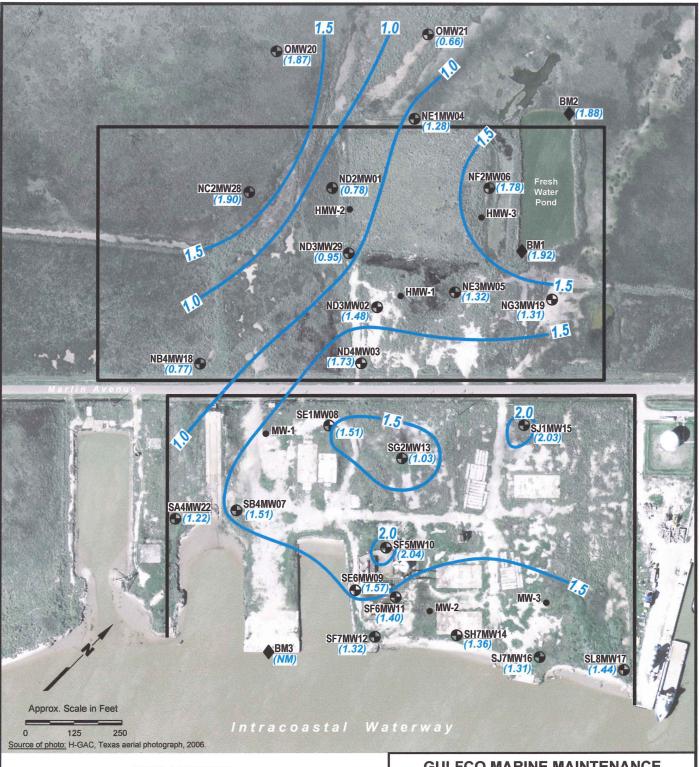
FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 19

ZONE A POTENTIOMETRIC SURFACE SEPTEMBER 6, 2007

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC



Gulfco Marine Maintenance Site Boundary (approximate) (1.32) Water-Level Elevation (Ft AMSL) Measured 11/07/07

Monitoring Well Location Zone A

(NM) Not Measured

 Previous Monitoring Well Location -1.5 Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.5 Ft

Staff Gauge

...

Staff gauge measurements included for reference only and not used to construct potentiometric surface contours.

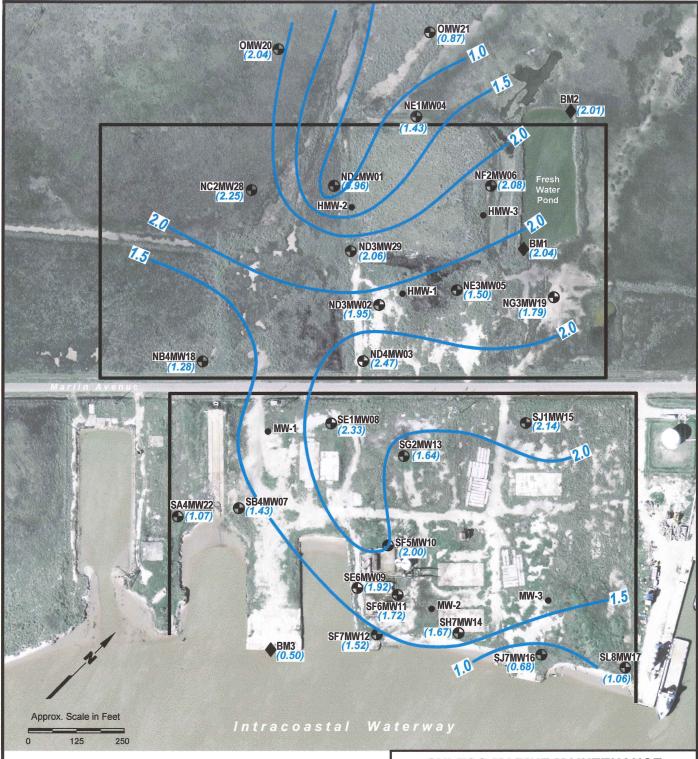
GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 20

ZONE A POTENTIOMETRIC SURFACE NOVEMBER 7, 2007

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC



Gulfco Marine Maintenance Site Boundary (approximate)



Staff Gauge

Monitoring Well Location Zone A

(1.52) Water-Level Elevation (Ft AMSL) Measured 12/03/07

 Previous Monitoring Well Location -1.5 Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.5 Ft

Note:

Staff gauge measurements included for reference only and not used to construct potentiometric surface contours.

Source of photo: H-GAC, Texas aerial photograph, 2006.

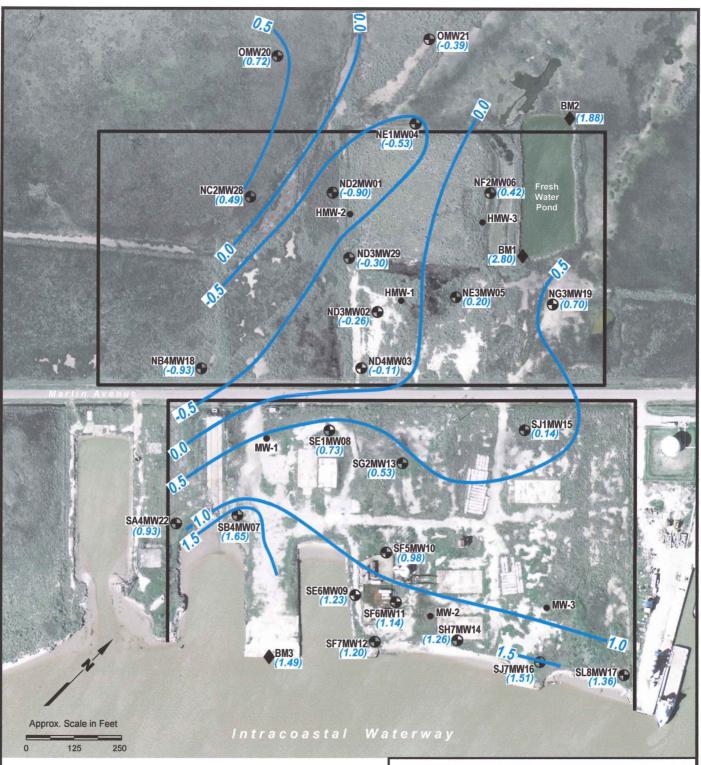
GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 21

ZONE A POTENTIOMETRIC SURFACE DECEMBER 3, 2007

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FER 2009	CHECKED: EED	

PASTOR, BEHLING & WHEELER, LLC



 Gulfco Marine Maintenance Site Boundary (approximate)



Staff Gauge

Monitoring Well Location Zone A

(1.52) Water-Level Elevation (Ft AMSL) Measured 06/17/08

 Previous Monitoring Well Location —1.5— Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.5 Ft

Note:

Staff gauge measurements included for reference only and not used to construct potentiometric surface contours.

Source of photo: H-GAC, Texas aerial photograph, 2006.

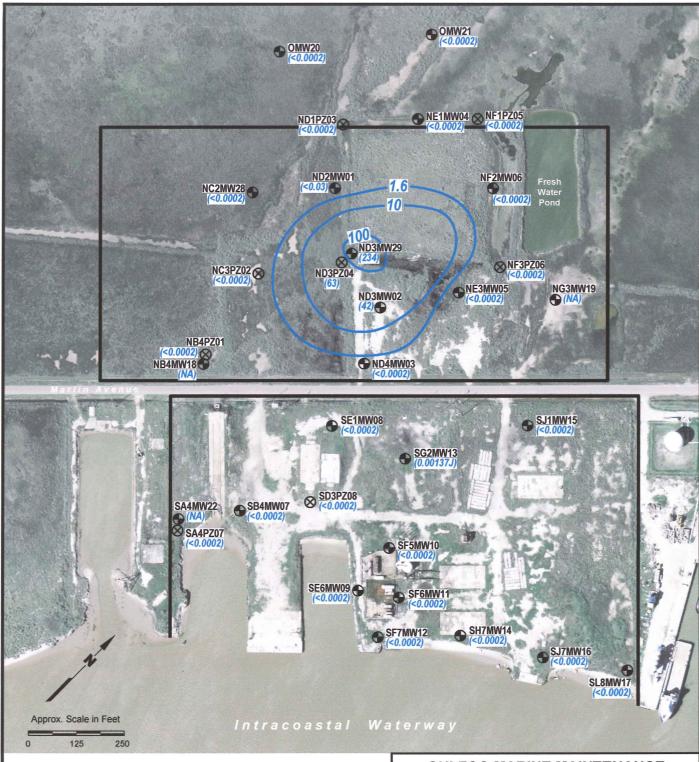
GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 22

ZONE A POTENTIOMETRIC SURFACE JUNE 17, 2008

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC



Gulfco Marine Maintenance Site Boundary (approximate)

- Monitoring Well Location Zone A
- Temporary Piezometer Zone A
- (<0.03) 1,1,1-Trichloroethane (1,1,1-TCA) Concentration (mg/L)
- 10 Concentration Contour (mg/L)
 Variable Contour Interval

Notes

- Concentrations are for the most recent sample collected from each location.
- NA = Not analyzed for this compound.
- 3. J = Estimated value.

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

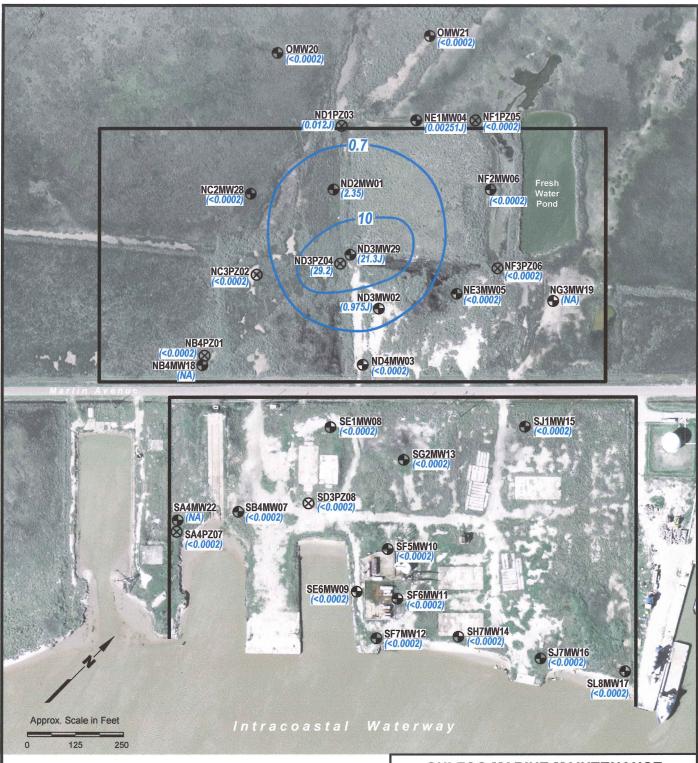
Figure 23

1,1,1-TCA CONCENTRATIONS IN ZONE A MONITORING WELLS

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC

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Gulfco Marine Maintenance Site Boundary (approximate)

- Monitoring Well Location Zone A
- Temporary Piezometer Zone A
- (2.35) 1,1-Dichloroethene (1,1-DCE) Concentration (mg/L)
- 0.7 Concentration Contour (mg/L) Variable Contour Interval

Notes:

- Concentrations are for the most recent sample collected from each location.
- 2. NA = Not analyzed for this compound.
- 3. J = Estimated value.

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

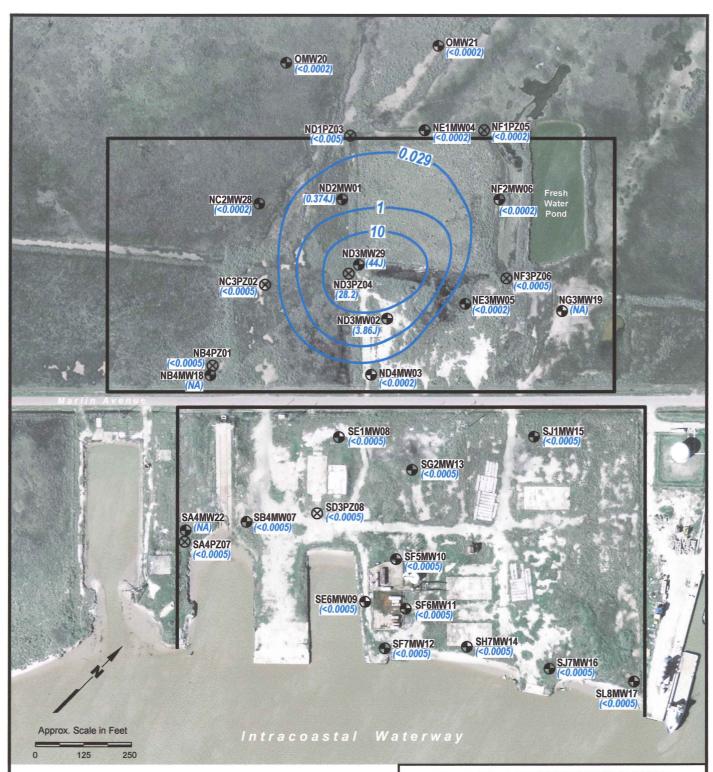
Figure 24

1,1-DCE CONCENTRATIONS IN ZONE A MONITORING WELLS

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC

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Gulfco Marine Maintenance Site Boundary (approximate)

- Monitoring Well Location Zone A
- Temporary Piezometer Zone A
- (3.86J) 1,2,3-Trichloropropane (1,2,3-TCP) Concentration (mg/L)
- 10 Concentration Contour (mg/L)
 Variable Contour Interval

Notes

- Concentrations are for the most recent sample collected from each location.
- NA = Not analyzed for this compound.
- 3. J = Estimated value.

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

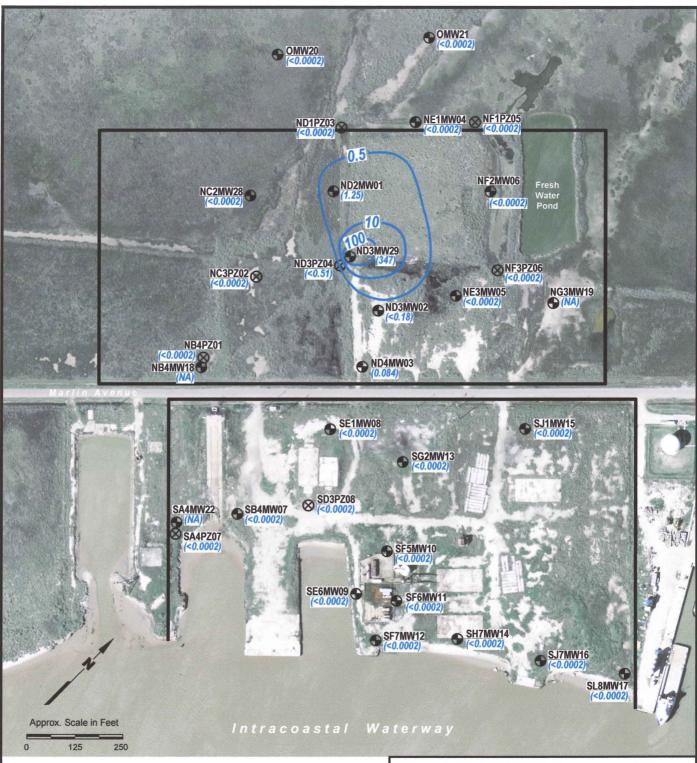
Figure 25

1,2,3-TCP CONCENTRATIONS IN ZONE A MONITORING WELLS

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC

CONSULTING ENGINEERS AND SCIENTISTS



Gulfco Marine Maintenance Site Boundary (approximate)

- Monitoring Well Location Zone A
- Temporary Piezometer Zone A
- (1.25) 1,2-Dichloroethane (1,2-DCA) Concentration (mg/L)
- 0.5 Concentration Contour (mg/L) Variable Contour Interval

Notes:

- Concentrations are from the most recent sample collected from each location.
- 2. NA = Not analyzed for this compound.

GULFCO MARINE MAINTENANCE

FREEPORT, BRAZORIA COUNTY, TEXAS

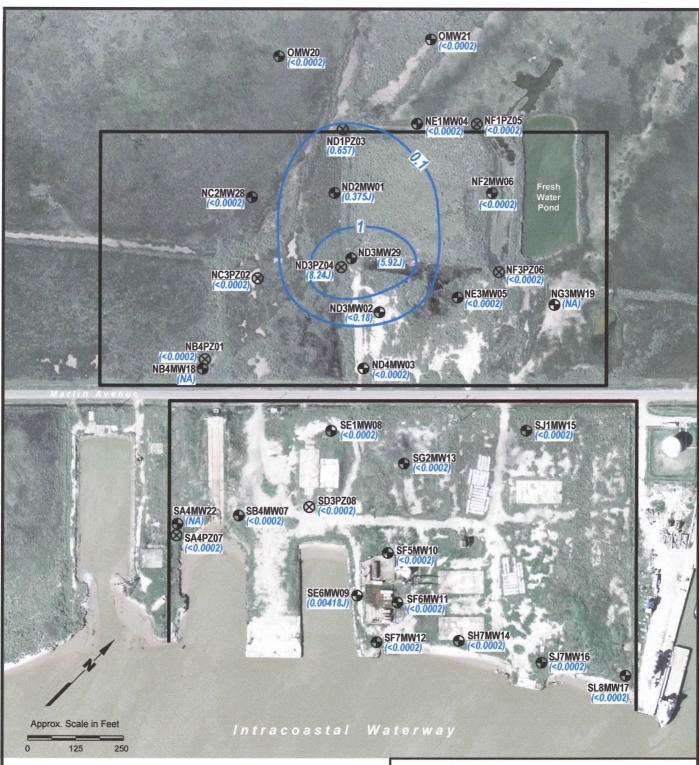
Figure 26

1,2-DCA CONCENTRATIONS IN ZONE A MONITORING WELLS

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC

CONSULTING ENGINEERS AND SCIENTISTS



Gulfco Marine Maintenance Site Boundary (approximate)

- Monitoring Well Location Zone A
- Temporary Piezometer Zone A
- (1.25) Benzene Concentration (mg/L)
- 0.1 Concentration Contour (mg/L) Variable Contour Interval

Notes

- Concentrations are for the most recent sample collected from each location.
- 2. NA = Not analyzed for this compound.
- 3. J = Estimated value

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

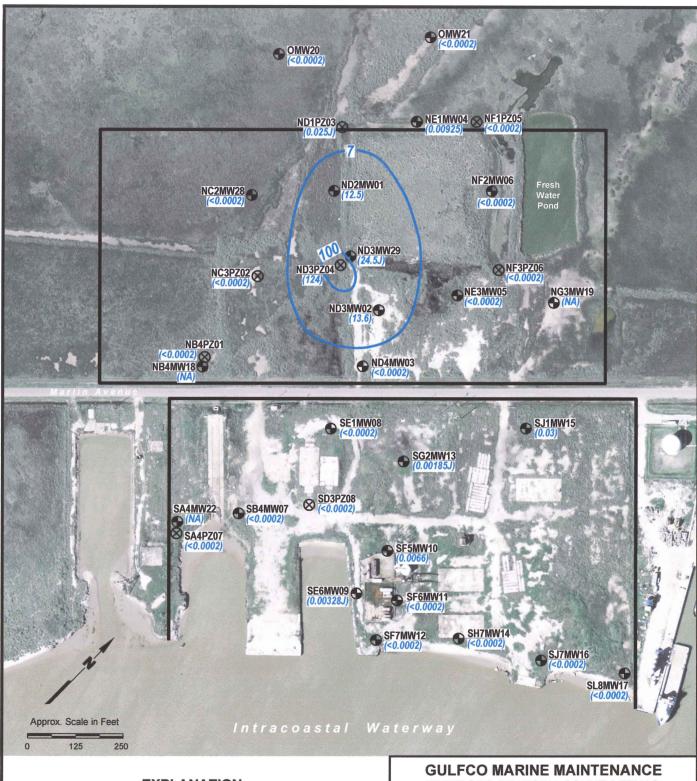
Figure 27

BENZENE CONCENTRATIONS IN ZONE A MONITORING WELLS

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

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Gulfco Marine Maintenance Site Boundary (approximate)

- Monitoring Well Location Zone A
- Temporary Piezometer Zone A
- (12.5) Cis-1,2-Dichloroethene (cis-1,2-DCE) Concentration (mg/L)
- Concentration Contour (mg/L)
 Variable Contour Interval

Notes:

- Concentrations are for the most recent sample collected from each location.
- 2. NA = Not analyzed for this compound.
- 3. J = Estimated value.

FREEPORT, BRAZORIA COUNTY, TEXAS

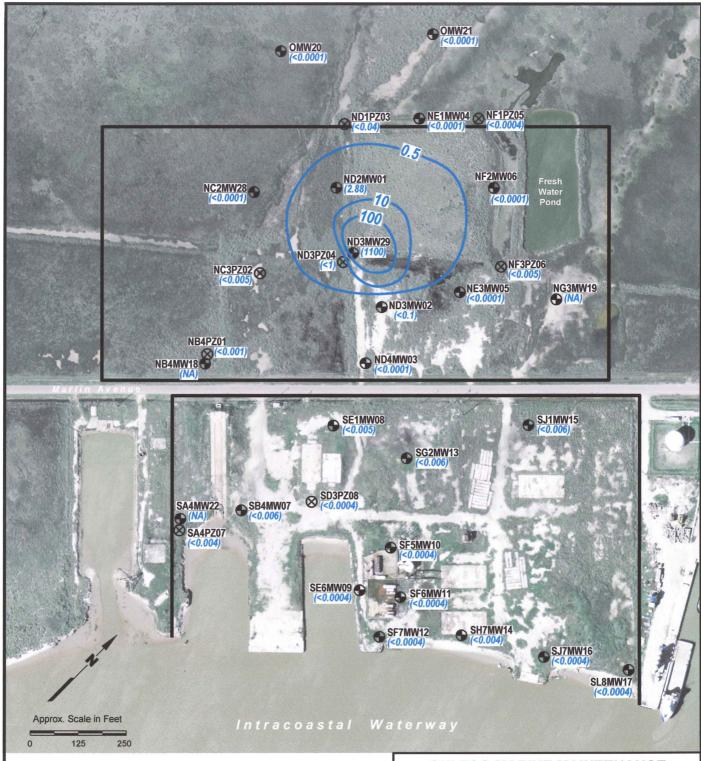
Figure 28

CIS-1,2-DCE CONCENTRATIONS IN ZONE A MONITORING WELLS

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

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Gulfco Marine Maintenance Site Boundary (approximate)

- Monitoring Well Location -Zone A
- Temporary Piezometer -Zone A
- Methylene Chloride (<0.1)Concentration (mg/L)
- -0.5 Concentration Contour (mg/L) Variable Contour Interval

- 1. Concentrations are for the most recent
- sample collected from each location.

 2. NA = Not analyzed for this compound.

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

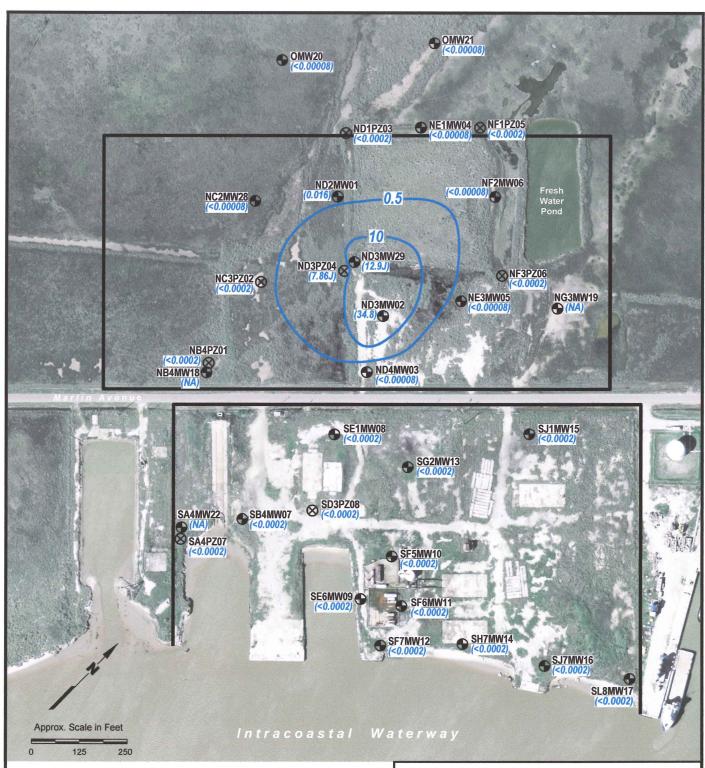
Figure 29

METHYLENE CHLORIDE CONCENTRATIONS IN ZONE A MONITORING WELLS

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

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Gulfco Marine Maintenance Site Boundary (approximate)

- Monitoring Well Location -Zone A
- Temporary Piezometer -Zone A

(7.86J) Tetrachloroethene (PCE) Concentration (mg/L)

— 0.5 — Concentration Contour (mg/L) Variable Contour Interval

- 1. Concentrations are for the most recent sample collected from each location.
- 2. NA = Not analyzed for this compound.3. J = Estimated value.

GULFCO MARINE MAINTENANCE

FREEPORT, BRAZORIA COUNTY, TEXAS

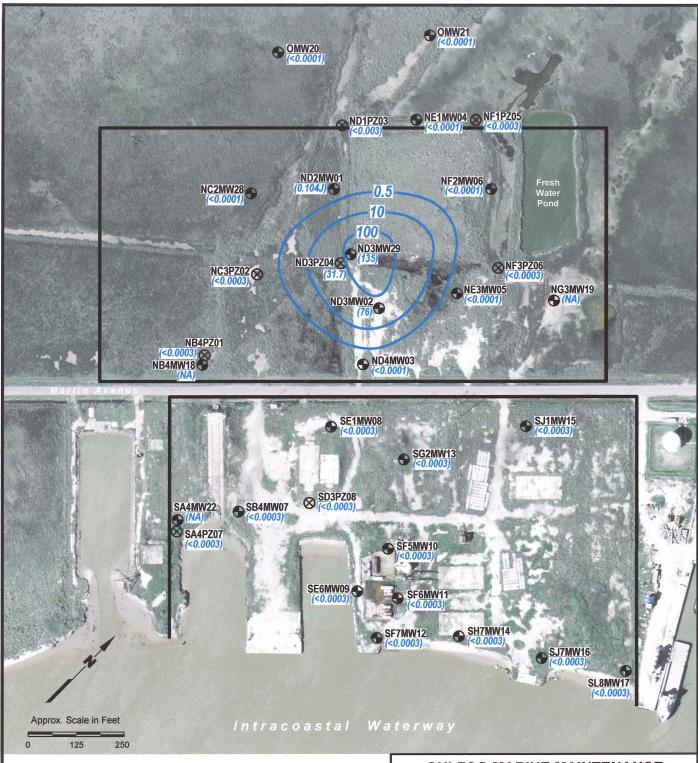
Figure 30

PCE CONCENTRATIONS IN ZONE A MONITORING WELLS

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

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 Gulfco Marine Maintenance Site Boundary (approximate)

Monitoring Well Location - Zone A

Temporary Piezometer - Zone A

(31.7) Trichloroethene (TCE) Concentration (mg/L)

— 0.5 — Concentration Contour (mg/L) Variable Contour Interval

Notes:

- Concentrations are for the most recent sample collected from each location.
- 2. NA = Not analyzed for this compound.
- 3. J = Estimated value.

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

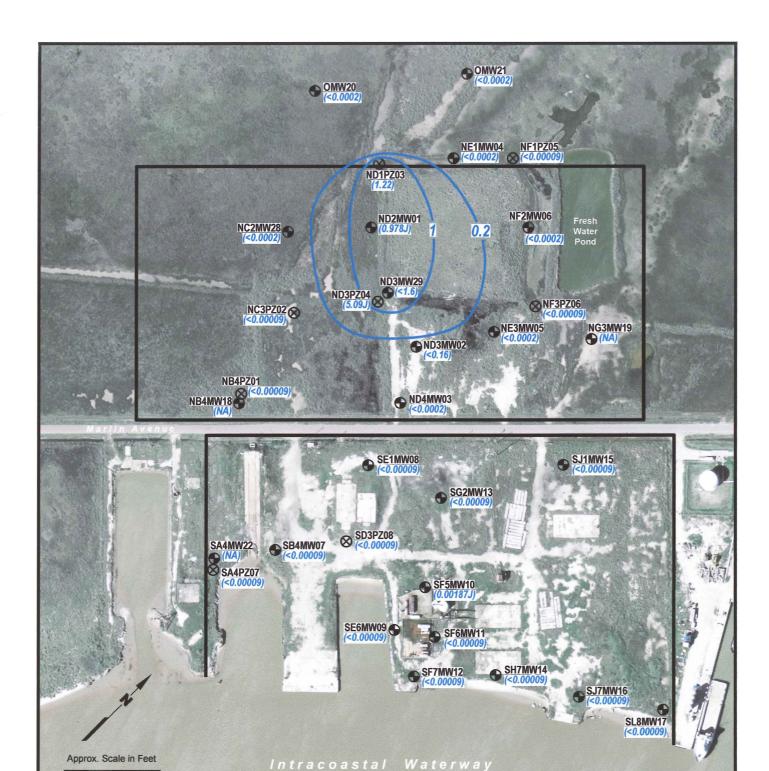
Figure 31

TCE CONCENTRATIONS IN ZONE A MONITORING WELLS

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

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Gulfco Marine Maintenance Site Boundary (approximate)

- Monitoring Well Location Zone A
- Temporary Piezometer Zone A
- (1.22) Vinyl Chloride Concentration (mg/L)
- 0.2 Concentration Contour (mg/L) Variable Contour Interval

Notes:

- Concentrations are for the most recent sample collected from each location.
- NA = Not analyzed for this compound.
- 3. J = Estimated value.

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

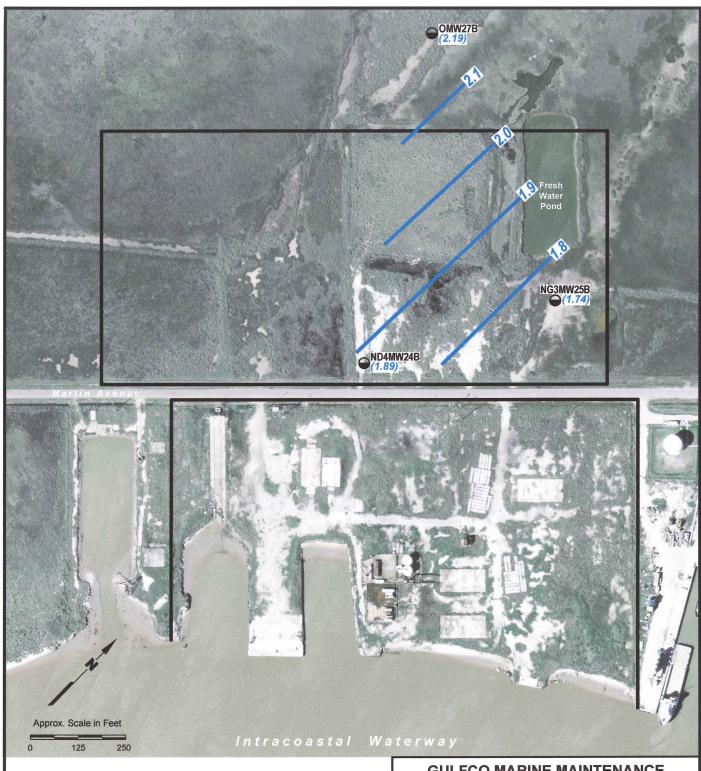
Figure 32

VINYL CHLORIDE CONCENTRATIONS IN ZONE A MONITORING WELLS

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

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Gulfco Marine Maintenance Site Boundary (approximate) (1.89) Water-Level Elevation (Ft AMSL) Measured 06/06/07

 Θ

Monitoring Well Location - Zone B

-2.0 Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.1 Ft

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 33

ZONE B POTENTIOMETRIC SURFACE JUNE 6, 2007

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

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Gulfco Marine Maintenance Site Boundary (approximate) (2.29) Water-Level Elevation (Ft AMSL) Measured 09/06/07

Monitoring Well Location - Zone B

Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.1 Ft

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

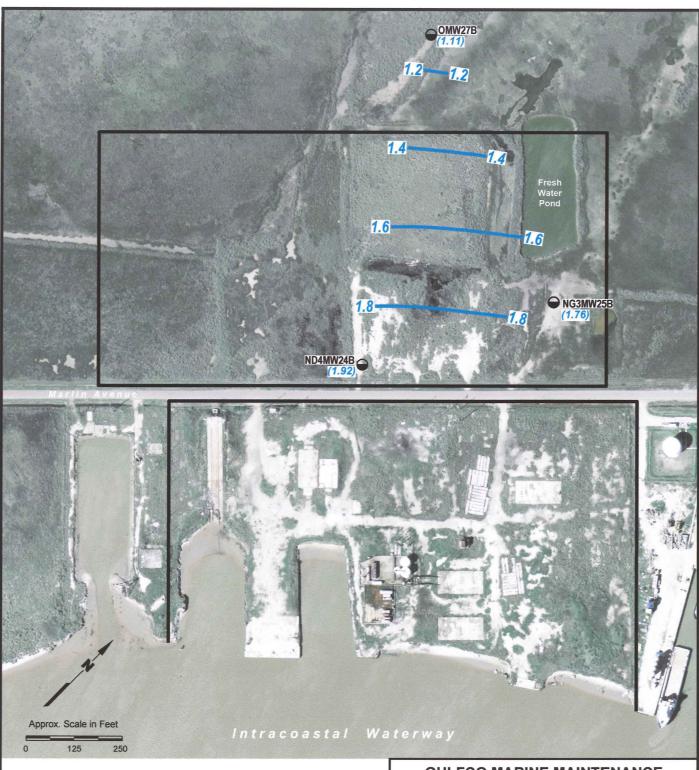
Figure 34

ZONE B POTENTIOMETRIC SURFACE SEPTEMBER 6, 2007

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

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Gulfco Marine Maintenance
Site Boundary (approximate)

(1.92) Water-Level Elevation (Ft AMSL) Measured 11/07/07

Monitoring Well Location - Zone B

-1.6 Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.2 Ft

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

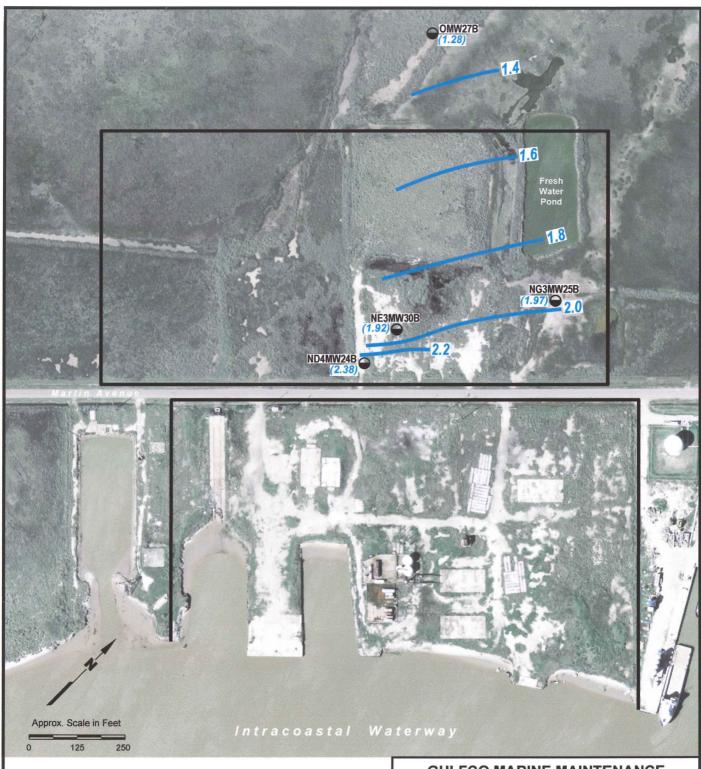
Figure 35

ZONE B POTENTIOMETRIC SURFACE NOVEMBER 7, 2007

		l .
DATE: FEB., 2009 CHEC	KED: EFP	

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Gulfco Marine Maintenance Site Boundary (approximate) (2.38) Water-Level Elevation (Ft AMSL) Measured 12/03/07

 \bigcirc

Monitoring Well Location - Zone B

Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.2 Ft

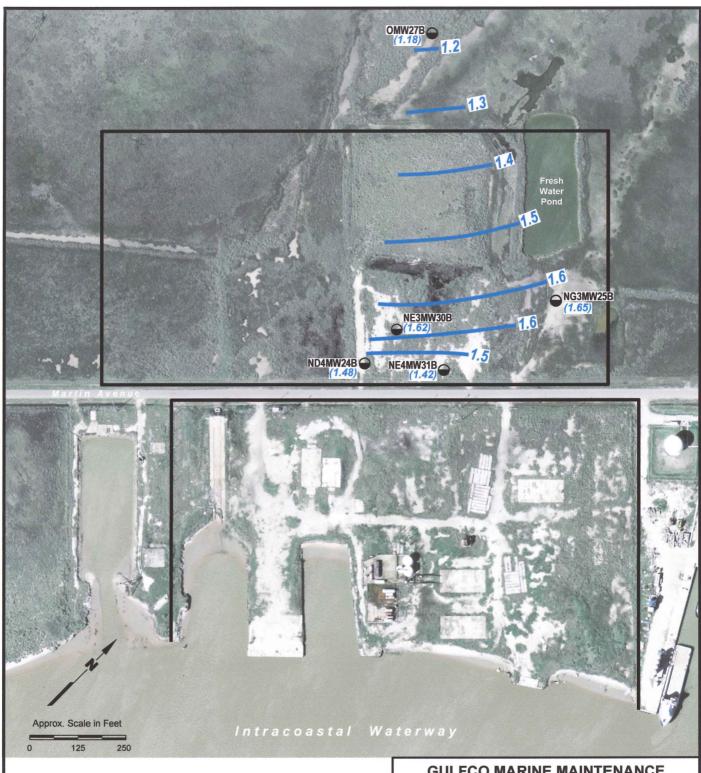
GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 36

ZONE B POTENTIOMETRIC SURFACE DECEMBER 3, 2007

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

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Gulfco Marine Maintenance Site Boundary (approximate) (1.48) Water-Level Elevation (Ft AMSL) Measured 7/30/08

Monitoring Well Location - Zone B

-1.5 Potentiometric Surface Contour (Ft AMSL) Contour Interval = 0.1 Ft

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

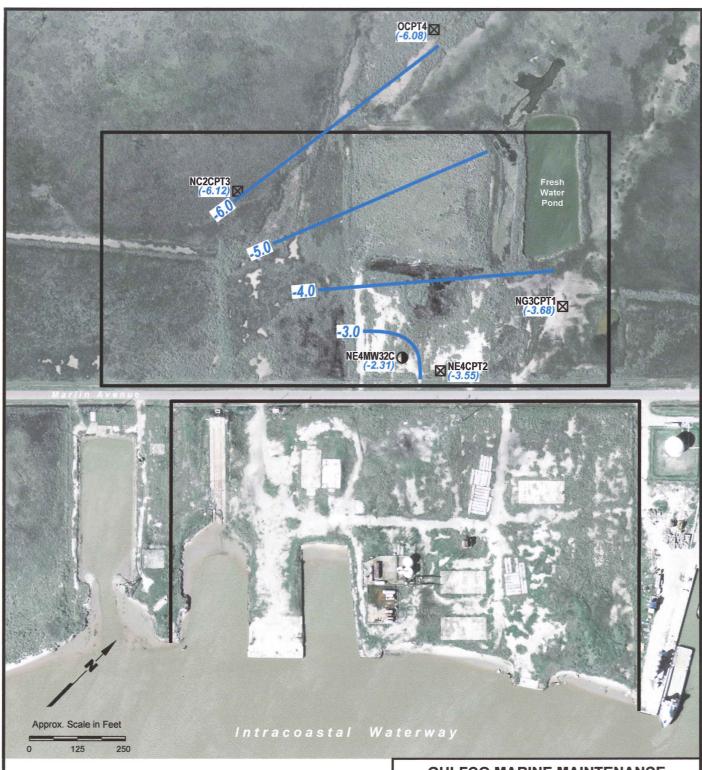
Figure 37

ZONE B POTENTIOMETRIC SURFACE JULY 30, 2008

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

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Gulfco Marine Maintenance Site Boundary (approximate) (-6.12) Water-Level Elevation (Ft AMSL) Measured 6/17/08

Monitoring Well Location -Zone C

■-3.0 ■ Potentiometric Surface Contour (Ft AMSL) Contour Interval = 1 Ft

CPT Piezometer Location -Zone C

PASTOR, BEHLING & WHEELER, LLC

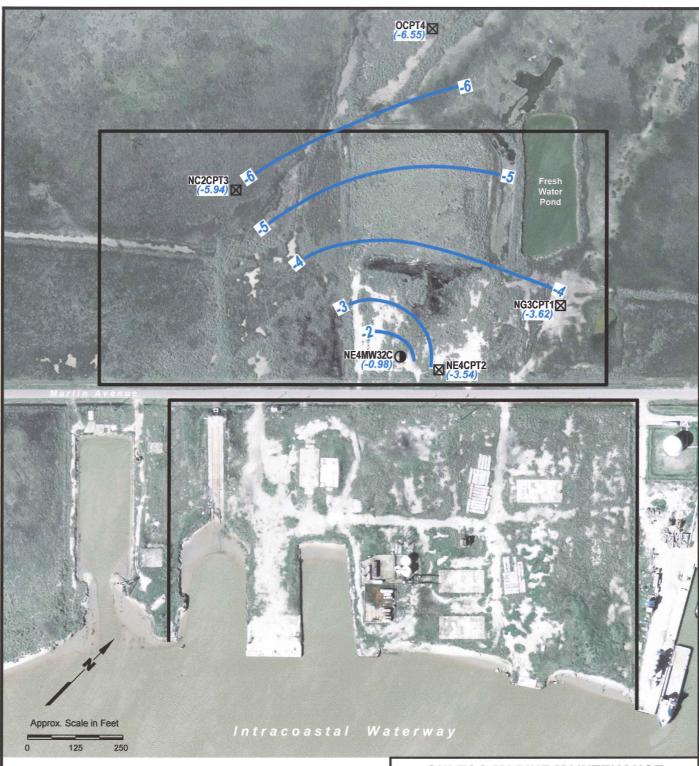
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GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 38

ZONE C POTENTIOMETRIC SURFACE JUNE 17, 2008

REVISIONS BY: ZGK PROJECT: 1352 DATE: FEB., 2009 CHECKED: EFP



Gulfco Marine Maintenance
Site Boundary (approximate)

(-6.55) Water-Level Elevation (Ft AMSL) Measured 7/30/08

Monitoring Well Location - Zone C

-3.0 = Potentiometric Surface Contour (Ft AMSL) Contour Interval = 1 Ft

Z CPT Piezometer Location - Zone C

Source of photo: H-GAC, Texas aerial photograph, 2006.

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

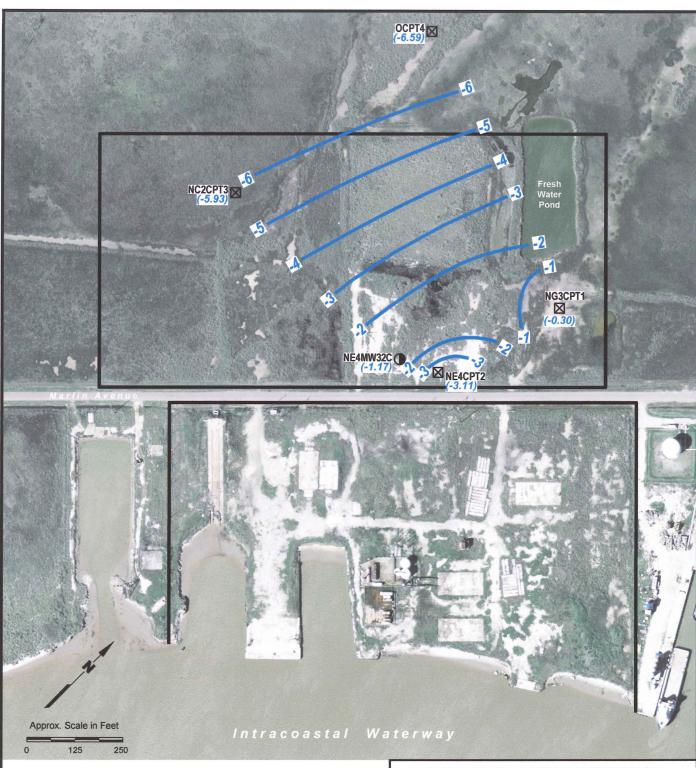
Figure 39

ZONE C POTENTIOMETRIC SURFACE JULY 30, 2008

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

PASTOR, BEHLING & WHEELER, LLC

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Gulfco Marine Maintenance Site Boundary (approximate) (-3.11) Water-Level Elevation (Ft AMSL) Measured 9/29/08

Monitoring Well Location -Zone C

■-3.0 ■ Potentiometric Surface Contour (Ft AMSL) Contour Interval = 1 Ft

CPT Piezometer Location - \boxtimes Zone C

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

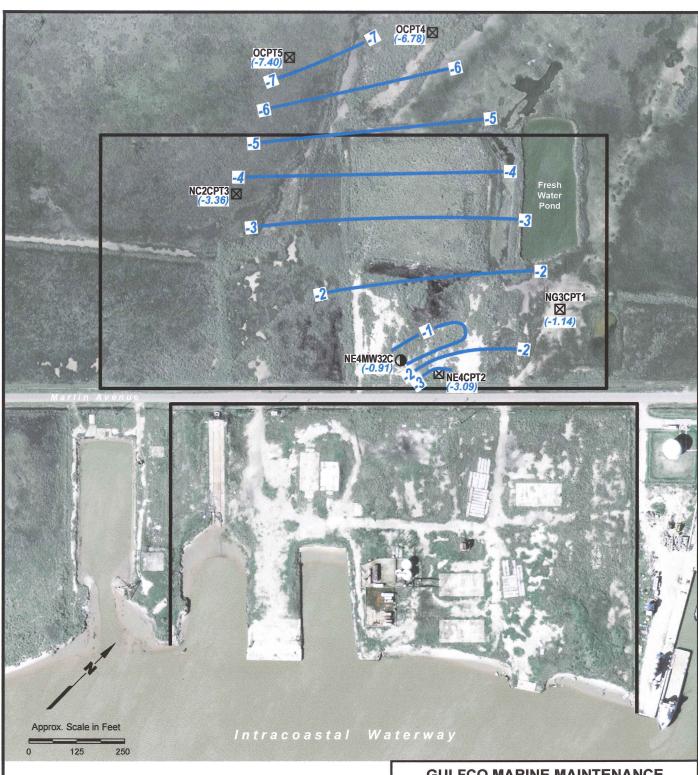
Figure 40

ZONE C POTENTIOMETRIC SURFACE SEPTEMBER 29, 2008

REVISIONS BY: ZGK PROJECT: 1352 DATE: FEB., 2009 CHECKED: EFP

PASTOR, BEHLING & WHEELER, LLC

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Gulfco Marine Maintenance Site Boundary (approximate) (-3.11) Water-Level Elevation (Ft AMSL) Measured 1/13/09

Monitoring Well Location -

■-3.0 ■ Potentiometric Surface Contour (Ft AMSL) Contour Interval = 1 Ft

CPT Piezometer Location - \boxtimes Zone C

GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 41

ZONE C POTENTIOMETRIC SURFACE JANUARY 13, 2009

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: FEB., 2009	CHECKED: EFP	

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TABLES

TABLE 1 – SITE INVESTIGATION COMMUNICATION SUMMARY

Investigation	Communication Method	Date	Description
Intracoastal Waterway -	Letter	09-18-06	Gulfco Restoration Group (GRG) ¹ provided Phase 1 Site and background data and proposed collection of three additional samples.
Sediment Letter		11-14-06	EPA approved (with modifications) GRG's 9-18-06 letter.
	Letter	01-12-07	GRG provided unvalidated laboratory report for one sample and explained that other two samples were not collected due to insufficient sediment thicknesses per 11-14-06 EPA letter.
	Letter	03-13-07	GRG provided validated data for final Intracoastal Waterway sample.
Intracoastal Waterway - Surface Water	Letter	09-18-06	GRG provided Site and background data. No additional sampling proposed.
Intracoastal Waterway -	Letter	09-18-06	GRG provided Phase 1 Site and background sediment data and proposed that no fish tissue collection be performed based on those data.
Fish Tissue	Letter	11-14-06	EPA responded to 9-18-06 letter – required collection of fish tissue samples and specified sample analyte list.
	Letter	11-20-06	GRG provided replacement pages to RI/FS Field Sampling Plan and Quality Assurance Project Plan to describe details of fish tissue sampling program in accordance with 11-14-06 EPA letter.
	Letter	01-12-07	GRG documented EPA approval (on 12-14-06) for collection of a reduced number (six) of red drum samples.
	Letter	03-20-07	GRG provided fish tissue analytical data and fish ingestion pathway human health baseline risk assessment.
	Letter	06-29-07	EPA approved (with modifications) fish ingestion pathway human health baseline risk assessment provided in GRG's 3-20-07 letter and requested resubmittal of revised letter.
	Letter	07-18-07	GRG provided revised version of fish ingestion pathway human health baseline risk assessment incorporating modifications from EPA 6-29-07 letter.
South Area Soils	Letter	09-11-07	GRG provided Phase 1 data and proposed Phase 2 investigation. Letter concluded that eastern extent of contamination had been identified.
	Letter	10-30-07	EPA approved (with modifications) Phase 2 investigation proposed in GRG's 9-11-07 letter and requested resubmittal of revised letter.

TABLE 1 – SITE INVESTIGATION COMMUNICATION SUMMARY

South Area Soils	Letter	11-28-07	GRG resubmitted revised version of Phase 1 data and proposed Phase 2 investigation letter incorporating modifications from EPA 10-30-07 letter.
(continued)	e-mail	12-13-07	GRG provided Phase 2 data and concluded that western extent of contamination had been identified.
Residential Surface Soil	Letter	08-20-07	GRG proposed analyte (lead) for off-site (Lot 19/20) samples based on data for Lots 21, 22, and 23 surface soil samples.
Investigation	Letter	09-06-07	EPA approved (with modification) Lot 19/20 analyte (lead) proposed in GRG's 8-20-07 letter and requested resubmittal of revised letter.
	Letter	09-21-07	GRG resubmitted revised version of proposed Lot 19/20 sample analyte letter incorporating modification from EPA 9-6-07 letter.
	e-mail	10-10-07	GRG provided unvalidated data for Lot 19/20 samples with preliminary conclusion (subject to validation) that no additional residential soil sampling was needed.
	e-mail	10-15-07	GRG provided validated data for Lot 19/20 samples with note that no data were qualified during validation process.
North Area Soils	Letter	09-11-07	GRG provided Phase 1 data and proposed Phase 2 investigation. Letter concluded that lateral extent of contamination had been determined, but proposed one additional sample to assess vertical extent of contamination and six additional borings to evaluate potential source areas.
	Letter	10-30-07	EPA approved (with modifications) Phase 2 investigation proposed in GRG's 9-11-07 letter and requested resubmittal of revised letter.
	Letter	11-28-07	GRG resubmitted Phase 1 data and proposed Phase 2 investigation letter incorporating modifications from EPA 10-30-07 letter.
	Letter	04-08-08	GRG provided validated Phase 2 data.
Wetlands – Sediment	Letter	11-28-06	GRG provided figure with proposed Phase 2 wetland sediment/surface water sample locations.
·	e-mail	12-01-06	GRG provided revised figure with proposed Phase 2 wetland sediment/surface water locations (included one additional sediment sample location requested by EPA).
	e-mail	12-01-06	EPA approved proposed Phase 2 wetland sediment/surface water locations in GRG's 12-01-06 e-mail.
	Letter	11-01-07	GRG provided Phase 1 and 2 wetland sediment data and proposed Phase 3 investigation.
	Letter	12-13-07	EPA approved Phase 3 wetland sediment investigation proposed in GRG's 11-01-7 letter.
	Letter	2-12-08	GRG provided Phase 3 wetland sediment data and proposed Phase 4 investigation.

TABLE 1 – SITE INVESTIGATION COMMUNICATION SUMMARY

Wetlands – Sediment	Letter	3-18-08	EPA approved (with modifications) Phase 4 wetland sediment investigation proposed in GRG's 2-12-08 letter and requested resubmittal of revised letter.
(continued)	Letter	04-14-08	GRG resubmitted Phase 3 wetland sediment data and proposed Phase 4 investigation incorporating modifications from EPA 3-18-08 letter.
	Letter	09-08-08	GRG provided validated Phase 4 data.
Wetlands — Surface Water	Letter	11-28-06	GRG provided figure with proposed Phase 2 wetland sediment/surface water sample locations.
	e-mail	12-01-06	GRG provided revised figure with proposed Phase 2 wetland sediment/surface water sample locations.
	e-mail	12-01-06	EPA approved proposed Phase 2 wetland sediment/surface water locations in GRG's 12-01-06 e-mail.
	e-mail	05-10-07	GRG provided Phase 1 and Phase 2 wetland surface water data with conclusion that no additional wetland surface water sampling was needed.
Ponds - Sediment	Letter	11-13-06	GRG provided validated data for pond sediment samples.
Ponds – Surface Water	Letter	11-13-06	GRG provided validated data for pond surface water samples.
Groundwater	Letter	01-19-07	GRG provided Phase 1 data and proposed Phase 2 investigation (including five additional Zone A monitoring wells and five Zone B monitoring wells).
	Letter	03-01-07	EPA approved (with modifications) proposed Phase 2 investigation in GRG's 1-19-07 letter. Modifications included addition of two more Zone A wells.
	Letter	06-13-07	GRG documented EPA concurrence (on 5-30-07) that proposed Zone B monitoring wells NCMW23B and OMW26B not be installed because soil borings indicated that Zone B was not present at these locations.
	Letter	10-12-07	GRG provided Phase 2 data and proposed Phase 3 investigation (including one additional Zone B monitoring well).
	Letter	11-08-07	EPA approved (with modifications) proposed Phase 3 investigation in GRG's 10-12-07 letter and requested resubmittal of revised letter.
	Letter	11-30-07	GRG resubmitted Phase 2 data and proposed Phase 3 investigations incorporating modifications from EPA 11-08-07 letter.
	Letter	01-15-08	GRG provided Phase 3 data and proposed Phase 4 investigation (including one additional Zone B monitoring well, two Zone C piezometers, and one Zone C monitoring well).

TABLE 1 – SITE INVESTIGATION COMMUNICATION SUMMARY

Groundwater	Telephone	01-28-08	EPA requested that proposed Phase 4 investigations be modified to include use of
(continued)	Conversation		Membrane Interface Probe during Cone Penetrometer (CPT) advancement and installation
			of four Zone C piezometers instead of two Zone C piezometers.
	Letter	02-11-08	GRG provided Phase 3 data and revised proposal for Phase 4 investigation (including one
			additional Zone B monitoring well, four Zone C piezometers, and one Zone C monitoring
			well).
	Letter	03-18-08	EPA approved proposed Phase 4 investigation in GRG's 2-11-08 letter.
	e-mail	06-18-08	GRG proposed deep soil boring location.
	e-mail	06-18-08	EPA approved proposed deep soil boring location.
	Telephone	07-16-08	GRG provided preliminary Phase 4 data to EPA.
	conversation		·
	e-mail	07-17-08	GRG proposed resampling of well NE4MW32C and sampling of four Zone C CPT
			piezometers.
	e-mail	07-23-08	Per EPA request, GRG provided description of procedures to be used for sampling CPT
			piezometers.
	e-mail	07-23-08	EPA approved proposed sampling procedures for CPT piezometers.
	Letter	08-12-08	GRG provided unvalidated Phase 4 data to EPA.
	e-mail	08-19-08	GRG provided preliminary data for NE4MW32C and four Zone C CPT piezometers.
	e-mail	09-03-08	GRG proposed resampling of well NE4MW32C.
	Letter	09-10-08	EPA approved proposed resampling of well NE4MW32C.
	e-mail	10-27-08	GRG provided updated Zone C data and proposed resampling of well NE4MW32C and
			installation of additional Zone C CPT piezometer.
	Letter	11-12-08	GRG provided validated Phase 4 data and proposed Phase 5 investigation (resampling of
			well NE4MW32C and installation of additional Zone C CPT piezometer).
	Letter	12-18-08	EPA approved proposed Phase 5 investigation.
	Letter	02-09-09	GRG provided Phase 5 data.

¹Gulfco Restoration Group (GRG) refers to LDL Coastal Limited LP (LDL), Chromalloy American Corporation (Chromalloy) and The Dow Chemical Company (Dow), collectively.

TABLE 2 - EXTENT EVALUATION COMPARISON VALUES - INTRACOASTAL WATERWAY SEDIMENTS(1)

	Potential Preliminar	Potential Preliminary Screening Values (PSVs) from Table 21 of RI/FS Work Plan ⁽²⁾				
Chemicals of Interest	Tot Sed Comb (3)	TCEQ Ecological Benchmark for Sediment ⁽⁴⁾	EPA EcoTox Threshold ⁽⁵⁾	PSV	Potential Site- Specific Background Values ⁽⁶⁾	Extent Evaluation Comparison Value
METALS			· · · · · · · · · · · · · · · · · · ·		<u></u>	
Aluminum	1.5E+05		_	1.53E+05	3.31E+04	1.53E+05
Antimony	8.3E+01			8.32E+01	1.26E+01	8.32E+01
Arsenic	1.1E+02	8.20E+00	8.20E+00	8.20E+00	1.52E+01	1.52E+01
Barium	2.3E+04			8.00E+03	3.54E+02	8.00E+03
Beryllium	2.7E+01			2.66E+01	1.99E+00	2.66E+01
Boron	1.1E+05			1.07E+05	6.65E+01	1.07E+05
Cadmium	1.1E+03	1.20E+00	1.20E+00	1.20E+00		1.20E+00
Chromium	3.6E+04	8.10E+01	8.10E+01	8.10E+01	3.26E+01	8.10E+01
Chromium (VI)	1.4E+02			1.36E+02	_	1.36E+02
Cobalt	3.2E+04			3.20E+04	1.63E+01	3.20E+04
Copper	2.1E+04	3.40E+01	3.40E+01	3.40E+01	2.38E+01	3.40E+01
Iron	_			NV ⁸		NV
Lead	5.0E+02	4.67E+01	4.67E+01	4.67E+01	2.05E+01	4.67E+01
Lithium	1.1E+04			1.07E+04	6.51E+01	1.07E+04
Manganese	1.4E+04			1.40E+04	6.01E+02	1.40E+04
Mercury	3.4E+01	1.50E-01	1.50E-01	1.50E-01	5.76E-02	1.50E-01
Molybdenum	1.8E+03			1.84E+03	4.46E-01	1.84E+03
Nickel	1.4E+03	2.09E+01	2.09E+01	2.09E+01	3.95E+01	3.95E+01
Selenium	2.7E+03			2.66E+03		2.66E+03
Silver	3.5E+02	1.00E+00	1.00E+00	1.00E+00	-	1.00E+00
Strontium	1.5E+05			1.52E+05	1.26E+02	1.52E+05
Thallium	4.3E+01			4.3E+01	_	4.30E+01
Tin	9.2E+04			9.19E+04		9.19E+04
Titanium	1.0E+06			1.00E+06	6.36E+01	1.00E+06
Vanadium	3.3E+02			3.29E+02	4.79E+01	3.29E+02
Zinc	7.6E+04	1.50E+02	1.50E+02	1.50E+02	7.75E+01	1.50E+02
PESTICIDES			· · · · · · · · · · · · · · · · · · ·			·
4,4'-DDD	1.2E+02	1.22E-03	1.22E-03	1.22E-03		1.22E-03
4,4'-DDE	8.7E+01	2.07E-03	2.07E-03	2.07E-03		2.07E-03
4,4'-DDT	8.7E+01	1.19E-03	1.19E-03	1.19E-03		1.19E-03
Aldrin	8.4E-01			8.36E-01		8.36E-01
alpha-BHC	4.1E+00			4.05E+00		4.05E+00

TABLE 2 - EXTENT EVALUATION COMPARISON VALUES - INTRACOASTAL WATERWAY SEDIMENTS⁽¹⁾

	Potential Preliminar	Potential Preliminary Screening Values (PSVs) from Table 21 of RI/FS Work Plan ⁽²⁾				
Chemicals of Interest	Tot Sed Comb (3)	TCEQ Ecological Benchmark for Sediment ⁽⁴⁾	EPA EcoTox Threshold ⁽⁵⁾	PSV	Potential Site- Specific Background Values ⁽⁶⁾	Extent Evaluation Comparison Value
alpha-Chlordane	4.1E+01	0.00226 ⁽⁷⁾		2.26E-03		2,26E-03
beta-BHC	1.4E+01			1.42E+01		1.42E+01
delta-BHC	1.4E+01			1.42E+01		1.42E+01
Dieldrin	8.9E-01	7.15E-04	7.15E-04	7.15E-04		7.15E-04
Endosulfan I	3.1E+02		2.90E-03	2.90E-03		2,90E-03
Endosulfan II	9.2E+02		1.40E-02	1.40E-02		1.40E-02
Endosulfan sulfate	9.2E+02			9.19E+02		9.19E+02
Endrin	4.6E+01		3.50E-03	3.50E-03		3.50E-03
Endrin aldehyde	4.6E+01			4.59E+01		4.59E+01
Endrin ketone	4.6E+01			4.59E+01		4.59E+01
gamma-BHC (Lindane)	2.0E+01	3.20E-04	3.20E-04	3.20E-04		3.20E-04
gamma-Chlordane	4.1E+01	0.00226 ⁽⁷⁾		2.26E-03		2.26E-03
Heptachlor	3.2E+00			3.16E+00		3.16E+00
Heptachlor epoxide	1.6E+00			1.56E+00		1.56E+00
Methoxychlor	7.7E+02		1.90E-02	1.90E-02		1.90E-02
Toxaphene	1.3E+01		2.80E-02	2.80E-02		2.80E-02
PCBs	2.3E+00	2.27E-02		2.27E-02		2.27E-02
Aroclor-1016	_			NV		NV
Aroclor-1221				NV		NV
Aroclor-1232			-	NV		NV
Aroclor-1242				NV		NV
Aroclor-1248				NV		NV
Aroclor-1254				NV		NV
Aroclor-1260				NV		NV
VOCs			<u> </u>		<u> </u>	I 2
1,1,1,2-Tetrachloroethane	2.1E+03			2.10E+03	_	2.10E+03
1,1,1-Trichloroethane	1.5E+05	2.63E+00	1.70E-01	1.70E-01		1.70E-01
1,1,2,2-Tetrachloroethane	2.7E+02	6.10E-01	9.40E-01	6.10E-01		6.10E-01
1,1,2-Trichloroethane	9.6E+02	3.00E-01		3.00E-01		3.00E-01
1,1-Dichloroethane	7.3E+04			7.35E+04		7.35E+04
1,1-Dichloroethene	3.7E+04	1.54E+01		1.54E+01		1.54E+01
1,1-Dichloropropene	5.4E+02			5.45E+02		5.45E+02
1,2,3-Trichloropropane	7.8E+00	_		7.79E+00		7.79E+00
1,2,4-Trichlorobenzene	1.5E+03	3.90E-01	9.20E+00	3.90E-01		3.90E-01
1,2,4-Trimethylbenzene	3.7E+04	2.16E+00		2.16E+00	_	2.16E+00
1,2-Dibromo-3-chloropropane	1.0E+01			1.01E+01		1.01E+01
1,2-Dibromoethane	2.7E+01			2.72E+01		2.72E+01

TABLE 2 - EXTENT EVALUATION COMPARISON VALUES - INTRACOASTAL WATERWAY SEDIMENTS⁽¹⁾

	Potential Preliminar	Potential Preliminary Screening Values (PSVs) from Table 21 of RI/FS Work Plan ⁽²⁾				
Chemicals of Interest	TotSed _{Comb} (3)	TCEQ Ecological Benchmark for Sediment ⁽⁴⁾	EPA EcoTox Threshold ⁽⁵⁾	PSV	Potential Site- Specific Background Values ⁽⁶⁾	Extent Evaluation Comparison Value
1,2-Dichlorobenzene	6.6E+04	7.40E-01	3.40E-01	3.40E-01		3.40E-01
1,2-Dichloroethane	6.0E+02	4.30E+00		4.30E+00		4.30E+00
1,2-Dichloropropane	8.0E+02	2.82E+00		2.82E+00		2.82E+00
1,3,5-Trimethylbenzene	3.7E+04			3.67E+04		3.67E+04
1,3-Dichlorobenzene	2.2E+04	3.20E-01	1.70E+00	3.20E-01		3.20E-01
1,3-Dichloropropane	5.4E+02	4.00E-02		4.00E-02		4.00E-02
1,4-Dichlorobenzene	2.3E+03	7.00E-01	3.50E-01	3.50E-01		3.50E-01
2,2-Dichloropropane	8.0E+02			8.01E+02		8.01E+02
2-Butanone	4.4E+05			4.41E+05		4.41E+05
2-Chloroethylvinyl ether	5.0E+01			4.95E+01		4.95E+01
2-Chlorotoluene	3.1E+03			3.06E+03		3.06E+03
2-Hexanone	4.4E+04			4.41E+04		4.41E+04
4-Chlorotoluene	1.5E+04			1.47E+04		1.47E+04
4-Isopropyltoluene	7.3E+04			7.35E+04		7,35E+04
4-Methyl-2-pentanone	5.9E+04	4.53E+01		4.53E+01		4.53E+01
Acetone	6.6E+05	1.67E+02	_	1.67E+02		1.67E+02
Acrolein	3.7E+02			3.67E+02		3.67E+02
Acrylonitrile	1.0E+02	1.70E-01		1.70E-01		1.70E-01
Benzene	9.9E+02	1.40E-01	5.70E-02	5.70E-02		5.70E-02
Bromobenzene	1.5E+04			1.47E+04		1.47E+04
Bromodichloromethane	8.8E+02			8.79E+02		8.79E+02
Bromoform	6.9E+03	1.78E+00	6.50E-01	6.50E-01		6.50E-01
Bromomethane	1.0E+03			1.03E+03		1.03E+03
Butanol	7.3E+04			7.35E+04		7.35E+04
Carbon disulfide	7.3E+04			7.35E+04		7.35E+04
Carbon tetrachloride	4.2E+02	3.67E+00	1.20E+00	1.20E+00		1.20E+00
Chlorobenzene	1.5E+04	2.90E-01	8.20E-01	2.90E-01		2.90E-01
Chloroethane	2.9E+05			2.94E+05		2.94E+05
Chloroform	7.3E+03	4.30E+00		4.30E+00	<u></u>	4.30E+00
Chloromethane	4.2E+03	8.74E+00		8.74E+00		8.74E+00
cis-1,2-Dichloroethene	7.3E+03			7.35E+03		7.35E+03
cis-1,3-Dichloropropene	7.3E+01			7.35E+01		7.35E+01
Dibromochloromethane	6.5E+02			6.49E+02		6.49E+02
Dibromomethane	7.3E+03			7.27E+03		7.27E+03
Dichlorodifluoromethane	1.5E+05			1.47E+05		1.47E+05
Ethylbenzene	7.3E+04	6.50E-01	3.60E+00	6.50E-01		6.50E-01
Hexachlorobutadiene	3.1E+01	2.00E-02		2.00E-02		2.00E-02

TABLE 2 - EXTENT EVALUATION COMPARISON VALUES - INTRACOASTAL WATERWAY SEDIMENTS⁽¹⁾

	Potential Preliminary Screening Values (PSVs) from Table 21 of RI/FS Work Plan ⁽²⁾					
Chemicals of Interest	TotSed _{Comb} (3)	TCEQ Ecological Benchmark for Sediment ⁽⁴⁾	EPA EcoTox Threshold (5)	PSV	Potential Site- Specific Background Values ⁽⁶⁾	Extent Evaluation Comparison Value
Isopropylbenzene (Cumene)	7.3E+04			7.35E+04		7.35E+04
Methyl acetate	7.3E+05		_	7.35E+05		7.35E+05
Methyl iodide	1.0E+03	`		1.03E+03		1.03E+03
Methylcyclohexane	1.0E+06			1.00E+06		1.00E+06
Methylene chloride	7.3E+03	3.82E+00		3.82E+00		3.82E+00
Naphthalene	2.5E+03	1.60E-01	1.60E-01	1.60E-01		1.60E-01
n-Butylbenzene	6.1E+03			6.12E+03		6.12E+03
n-Propylbenzene	2.9E+04			2.94E+04		2.94E+04
o-Xylene	1.0E+06			1.00E+06		1.00E+06
sec-Butylbenzene	2.9E+04			2.94E+04		2.94E+04
Styrene	1.5E+05	3.72E+00		3.72E+00		3.72E+00
tert-Butyl methyl ether (MTBE)	7.3E+03			7.35E+03		7.35E+03
tert-Butylbenzene	2.9E+04			2.94E+04		2.94E+04
Tetrachloroethene	1.0E+03	3.10E+00	5,30E-01	5.30E-01		5.30E-01
Toluene	5.9E+04	9.40E-01	6.70E-01	6.70E-01		6.70E-01
trans-1,2-Dichloroethene	1.5E+04			1.47E+04		1.47E+04
trans-1,3-Dichloropropene	5.4E+02			5.45E+02		5.45E+02
Trichloroethene	4.4E+03	1.47E+00	1.60E+00	1.47E+00	<u> </u>	1.47E+00
Trichlorofluoromethane	2.2E+05			2.20E+05		2.20E+05
Trichlorotrifluoroethane	1.0E+06	,		1.00E+06		1.00E+06
Vinyl acetate	7.3E+05			7.35E+05		7.35E+05
Vinyl decide	3.6E+01	 		3.63E+01		3.63E+01
Xylene (total)	1.5E+05	2.54E+00		2.54E+00		2.54E+00
SVOCs	1.55.05	2.34E100	<u> </u>	2,346100		2.3415100
1,2Diphenylhydrazine/Azobenzen	1.3E+02			1.3E+02		1.30E+02
2,4,5-Trichlorophenol	1.5E+04			1.53E+04		1.53E+04
2,4,6-Trichlorophenol	1.3E+03			1.29E+03		1.29E+03
2,4-Dichlorophenol	4.6E+02			4.59E+02		4.59E+02
2,4-Dimethylphenol	3.1E+03			3.06E+03		3.06E+03
2,4-Dinitrophenol	3.1E+02			3.06E+02		3.06E+02
2,4-Dinitrotoluene	2.1E+01			2.09E+01		2.09E+01
2.6-Dinitrotoluene	2.1E+01			2.09E+01		2.09E+01
2-Chloronaphthalene	9.9E+03			9.90E+03		9.90E+03
2-Chlorophenol	3.7E+03			3.67E+03		3.67E+03
2-Methylnaphthalene	4.9E+02	7.00E-02	7.00E-02	7.00E-02		7.00E-02
2-Nitroaniline	4.6E+01	7.00E-02	7.005-02	4.59E+01		4.59E+01
2-Nitrophenol	3.1E+02		 	4.39E+01 3.06E+02		4.39E+01 3.06E+02

TABLE 2 - EXTENT EVALUATION COMPARISON VALUES - INTRACOASTAL WATERWAY SEDIMENTS⁽¹⁾

	Potential Preliminar	Potential Preliminary Screening Values (PSVs) from Table 21 of RI/FS Work Plan ⁽²⁾				
Chemicals of Interest	Tot Sed _{Comb} (3)	TCEQ Ecological Benchmark for Sediment ⁽⁴⁾	EPA EcoTox Threshold (5)	PSV	Potential Site- Specific Background Values ⁽⁶⁾	Extent Evaluation Comparison Value
3,3'-Dichlorobenzidine	3.2E+01			3.16E+01		3.16E+01
3-Nitroaniline	4.6E+01			4.59E+01		4.59E+01
4,6-Dinitro-2-methylphenol	3.1E+02			3.06E+02		3.06E+02
4-Bromophenyl phenyl ether	9.5E-01		1.30E+00	9.47E-01		9.47E-01
4-Chloro-3-methylphenol	7.7E+02			7.65E+02		7.65E+02
4-Chloroaniline	6.1E+02			6.12E+02		6.12E+02
4-Chlorophenyl phenyl ether	9.5E-01			9.47E-01		9.47E-01
4-Nitroaniline	3.7E+02			3.74E+02		3.74E+02
4-Nitrophenol	3.1E+02			3.06E+02		3.06E+02
Acenaphthene	7.4E+03	1.60E-02	1.60E-02	1.60E-02		1.60E-02
Acenaphthylene	7.4E+03	4.40E-02	4.40E-02	4.40E-02		4.40E-02
Acetophenone	1.5E+04			1.53E+04		1.53E+04
Aniline	1.1E+03			1.07E+03		1.07E+03
Anthracene	3.7E+04	8.53E-02	8.53E-02	8.53E-02		8.53E-02
Atrazine (Aatrex)	6,4E+01			6.40E+01		6.40E+01
Benzaldehyde	7.3E+04			7.35E+04		7.35E+04
Benzidine	6.2E-02	_		6.18E-02		6.18E-02
Benzo(a)anthracene	1.6E+01	2.61E-01	2.61E-01	2.61E-01		2.61E-01
Benzo(a)pyrene	1.6E+00	4.30E-01	4.30E-01	4.30E-01		4.30E-01
Benzo(b)fluoranthene	1.6E+01	_		1.59E+01		1.59E+01
Benzo(g,h,i)perylene	3.7E+03			3.71E+03		3.71E+03
Benzo(k)fluoranthene	1.6E+02			1.59E+02	_	1.59E+02
Benzoic acid	6.1E+05			6.12E+05		6.12E+05
Benzyl alcohol	4.6E+04			4.59E+04		4.59E+04
Biphenyl	7.7E+03		1.10E+00	1.10E+00		1.10E+00
Bis(2-Chloroethoxy)methane	1.3E+01			1.29E+01		1.29E+01
Bis(2-Chloroethyl)ether	5.0E+01			4.95E+01		4.95E+01
Bis(2-Chloroisopropyl)ether	2.0E+02			2.03E+02		2.03E+02
Bis(2-Ethylhexyl)phthalate	2.4E+02	1.82E-01	1.82E-01	1.82E-01		1.82E-01
Butyl benzyl phthalate	3.1E+04		1.10E+01	1.10E+01		1.10E+01
Caprolactam	7.7E+04			7.65E+04		7.65E+04
Carbazole	7.1E+02			7.10E+02		7.10E+02
Chrysene	1.6E+03	3.84E-01	3.84E-01	3.84E-01	_	3.84E-01
Dibenz(a,h)anthracene	1.6E+00	6.34E-02	6.34E-02	6.34E-02		6,34E-02
Dibenzofuran	6.1E+02	0.5+E-02	2.00E+00	2.00E+00		2.00E+00
Diethyl phthalate	1.2E+05		6.30E-01	6.30E-01		6.30E-01
Dimethyl phthalate	1.2E+05		0.50E-01	1.22E+05		1.22E+05

TABLE 2 - EXTENT EVALUATION COMPARISON VALUES - INTRACOASTAL WATERWAY SEDIMENTS⁽¹⁾

	Potential Preliminary Screening Values (PSVs) from Table 21 of RI/I Work Plan ⁽²⁾		SVs) from Table 21 of RI/FS			
Chemicals of Interest	TotSed _{Comb} (3)	TCEQ Ecological Benchmark for Sediment ⁽⁴⁾	EPA EcoTox Threshold ⁽⁵⁾	PSV	Potential Site- Specific Background Values ⁽⁶⁾	Extent Evaluation Comparison Value
Di-n-butyl phthalate	1.5E+04		1.10E+01	1.10E+01	_	1.10E+01
Di-n-octyl phthalate	3.1E+03			3.06E+03		3.06E+03
Fluoranthene	4.9E+03	6.00E-01	6.00E-01	6.00E-01		6.00E-01
Fluorene	4.9E+03	1.90E-02	1.90E-02	1.90E-02		1.90E-02
Hexachlorobenzene	8.9E+00			8.88E+00		8.88E+00
Hexachlorocyclopentadiene	9.2E+02			9.19E+02		9.19E+02
Hexachloroethane	1.5E+02		1.00E+00	1.00E+00		1.00E+00
Indeno(1,2,3-cd)pyrene	1.6E+01			1.59E+01		1.59E+01
Isophorone	1.5E+04			1.50E+04		1.50E+04
Nitrobenzene	7.7E+01		<u></u>	7.65E+01		7.65E+01
n-Nitrosodimethylamine	1.1E+00			1.07E+00		1.07E+00
n-Nitrosodi-n-propylamine	6.3E-01		_	6.31E-01		6.31E-01
n-Nitrosodiphenylamine	9.0E+02			9.01E+02		9.01E+02
o-Cresol	7.7E+03			7.65E+03		7.65E+03
Pentachlorophenol	5.6E+01			5.61E+01		5.61E+01
Phenanthrene	3.7E+03	2.40E-01	2.40E-01	2.40E-01		2.40E-01
Phenol	4.6E+04			4.59E+04		4.59E+04
Pyrene	3.7E+03	6.65E-01	6.65E-01	6.65E-01		6.65E-01
Pyridine	7.3E+02			7.35E+02		7.35E+02
Chloride				NV	NV	NV
Sulfate				NV	NV	NV
Total Moisture				NV	NV	NV
Total Organic Carbon			_	NV	NV	NV

- 1. All values in mg/kg.
- 2. Values from Table 21 of RI/FS Work Plan (updated to reflect changes since 2005 where applicable)
- 3. TotSed_{Comb} PCL = TCEQ Protective Concentration Level for total sediment combined pathway (includes inhalation; ingestion; dermal pathways).
- 4. From Table 3-3 of TCEQ "Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas".
- 5. From Table 2 of EPA "Ecotox Thresholds" ECO Update January 1996.
- 6. 95% UTL calculated from site-specific background samples.
- 7. Value listed is for total Chlordane.
- 8. NV = No Preliminary Screening Value.

TABLE 3 - DETECTED INTRACOASTAL WATERWAY SEDIMENT CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES

Sample Location	Date	Chemical of Interest	Concentration (mg/kg)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/kg)
IWSE01	6/26/2006	4,4'-DDT	0.00332J	0.00119
		Acenaphthene	0.0631J	0.016
		Benzo(a)anthracene	0.395	0.261
		Benzo(a)pyrene	0.445	0.43
		Chrysene	0.475J	0.384
IWSE03	6/26/2006	Dibenz(a,h)anthracene	0.151	0.0634
	•	Fluoranthene	0.804J-	0.6
·		Fluorene	0.046J	0.019
		Phenanthrene	0.508	0.24
		Pyrene	0.862	0.665
IWSE04	6/26/2006	Dibenz(a,h)anthracene	0.0694J	0.0634
IWSE05	6/26/2006	Fluorene	0.0241J	0.019
	· · · · · · · · · · · · · · · · · · ·	Acenaphthene	0.0239J	0.016
IWSE07	6/26/2006	Dibenz(a,h)anthracene	0.235	0.0634
		Fluorene	0.0277J	0.019

⁽¹⁾ Extent Evaluation Comparison Values from Table 2.

⁽²⁾ Data qualifiers: J =estimated value. J -estimated value, biased low.

TABLE 4 - SURFACE WATER EXTENT EVALUATION COMPARISON VALUES (1)

	Potential Preliminary Screening V		
Chemicals of Interest	Human Health Surface Water Risk Based Exposure Limits (^{SW} RBELs) Saltwater Fish Only ⁽³⁾	TCEQ Ecological Benchmark for Water ⁽⁴⁾	Extent Evaluation Comparison Value
METALS ⁽⁵⁾			·
Aluminum			NV
Antimony	6.40E-01		6.40E-01
Arsenic	1.40E-03		1.40E-03
Dissolved Arsenic		7.80E-02	7.80E-02
Barium		2.50E+01	2.50E+01
Beryllium		-	NV
Boron			NV
Dissolved Cadmium		1.00E-02	1.00E-02
Dissolved Chromium	2.22E+00	1.03E-01	1.03E-01
Dissolved Chromium (VI)		4.96E-02	4.96E-02
Cobalt			NV
Dissolved Copper		3.60E-03	3.60E-03
Ferric Iron			NV
Iron	_		NV
Dissolved Lead	1.69E-02	5.30E-03	5.30E-03
Lithium			NV
Manganese	1.00E-01		1.00E-01
Mercury	2.50E-05	1.10E-03	2.50E-05
Molybdenum			NV
Nickel	4.60E+00		4.60E+00
Dissolved Nickel		1.31E-02	1.31E-02
Selenium	4.20E+00	1.36E-01	1.36E-01
Dissolved Silver		1.90E-04	1.90E-04
Strontium			NV
Thallium	4.70E-04	2.13E-02	4.70E-04
Tin			NV
Titanium			NV
Vanadium			NV
Zinc	2.60E+01		2.60E+01
Dissolved Zinc		8.42E-02	8.42E-02

TABLE 4 - SURFACE WATER EXTENT EVALUATION COMPARISON VALUES (1)

	Potential Preliminary Screening			
Chemicals of Interest	Human Health Surface Water Risk- Based Exposure Limits (^{SW} RBELs) Saltwater Fish Only ⁽³⁾ TCEQ Ecological Benchmark for Water ⁽⁴⁾		Extent Evaluation Comparison Value	
PESTICIDES			NV	
4,4'-DDD	7.00E-06	2.50E-05	7.00E-06	
4,4'-DDE	5.00E-06	1.40E-04	5.00E-06	
4,4'-DDT	5.00E-06	1.00E-06	1.00E-06	
Aldrin	2.80E-06	1.30E-04	2.80E-06	
alpha-BHC		2.50E-02	2.50E-02	
alpha-Chlordane	2.13E-05		2.13E-05	
beta-BHC			NV	
delta-BHC			NV	
Dieldrin		2.00E-06	2.00E-06	
Endosulfan I	8.90E-02	9.00E-06	9.00E-06	
Endosulfan II	8.90E-02	9.00E-06	9.00E-06	
Endosulfan sulfate	8.90E-02	9.00E-06	9.00E-06	
Endrin	8.93E-04	2.00E-06	2.00E-06	
Endrin aldehyde	3.00E-04		3.00E-04	
Endrin ketone			NV	
gamma-BHC (Lindane)		1.60E-05	1.60E-05	
gamma-Chlordane	_		NV	
Heptachlor	1.77E-06	4.00E-06	1.77E-06	
Heptachlor epoxide	7.23E-04	3.60E-06	3.60E-06	
Methoxychlor	1.48E-03	3.00E-05	3.00E-05	
Toxaphene	9.00E-06	2.00E-07	2.00E-07	
PCBs	8.85E-07	3.00E-05	8.85E-07	
Aroclor-1016			NV	
Aroclor-1221			NV	
Aroclor-1232			NV	
Aroclor-1242			NV	
Aroclor-1248			NV	
Aroclor-1254			NV	
Aroclor-1260			NV	

TABLE 4 - SURFACE WATER EXTENT EVALUATION COMPARISON VALUES (1)

	Potential Preliminary Screening V		
Chemicals of Interest	Human Health Surface Water Risk Based Exposure Limits (^{SW} RBELs) Saltwater Fish Only ⁽³⁾	TCEQ Ecological Benchmark for Water ⁽⁴⁾	Extent Evaluation Comparison Value
VOCs	<u> </u>		*
1,1,1,2-Tetrachloroethane			NV
1,1,1-Trichloroethane		1.56E+00	1.56E+00
1,1,2,2-Tetrachloroethane	4.00E-02	4.51E-01	4.00E-02
1,1,2-Trichloroethane		2.75E-01	2.75E-01
1,1-Dichloroethane			NV
1,1-Dichloroethene		1.25E+01	1.25E+01
1,1-Dichloropropene			NV
1,2,3-Trichloropropane			NV
1,2,4-Trichlorobenzene	7.00E-02	2.20E-02	2.20E-02
1,2,4-Trimethylbenzene		2.17E-01	2.17E-01
1,2-Dibromo-3-chloropropane			NV
1,2-Dibromoethane	2.23E-04		2.23E-04
1,2-Dichlorobenzene	1.30E+00	9.90E-02	9.90E-02
1,2-Dichloroethane	4.93E-02	5.65E+00	4.93E-02
1,2-Dichloroethene(Total)		6.80E-01	6.80E-01
1,2-Dichloropropane	1.50E-01	2.40E+00	1.50E-01
1,3,5-Trimethylbenzene			NV
1,3-Dichlorobenzene	9.60E-01	1.42E-01	1.42E-01
1,3-Dichloropropane	1.50E-01		1.50E-01
1,4-Dichlorobenzene	1.90E-01	9.90E-02	9.90E-02
2,2-Dichloropropane			NV
2-Butanone			NV
2-Chloroethylvinyl ether			NV
2-Chlorotoluene			NV
2-Hexanone			NV
4-Chlorotoluene			NV
4-Isopropyltoluene			NV
4-Methyl-2-pentanone		6.15E+01	6.15E+01

TABLE 4 - SURFACE WATER EXTENT EVALUATION COMPARISON VALUES (1)

	Potential Preliminary Screening V	Potential Preliminary Screening Values (PSVs) from Table 20 of RI/FS Work Plan ⁽²⁾			
Chemicals of Interest	Human Health Surface Water Risk Based Exposure Limits (^{SW} RBELs) Saltwater Fish Only ⁽³⁾	TCEQ Ecological Benchmark for Water ⁽⁴⁾	Extent Evaluation Comparison Value		
Acetone		2.82E+02	2.82E+02		
Acrolein	2.90E-01	5.00E-03	5.00E-03		
Acrylonitrile	7.30E-03	2.91E-01	7.30E-03		
Benzene	7.08E-02	1.09E-01	7.08E-02		
Bromobenzene		<u></u>	NV		
Bromodichloromethane			NV		
Bromoform	1.40E+00	1.22E+00	1.22E+00		
Bromomethane		6.00E-01	6.00E-01		
Butanol			NV		
Carbon disulfide			NV		
Carbon tetrachloride	5.60E-03	1.50E+00	5.60E-03		
Chlorobenzene	9.20E-01	1.05E-01	1.05E-01		
Chloroethane			NV		
Chloroform	8.61E-01	4.10E+00	8.61E-01		
Chloromethane		1.35E+01	1.35E+01		
cis-1,2-Dichloroethene		6.80E-01	6.80E-01		
cis-1,3-Dichloropropene	1.07E-01		1.07E-01		
Cyclohexane			NV		
Dibromochloromethane	4.77E-02		4.77E-02		
Dibromomethane		N=10	NV		
Dichlorodifluoromethane			NV		
Ethylbenzene	2.10E+00	2.49E-01	2.49E-01		
Hexachlorobutadiene	2.40E-03	3.20E-04	3.20E-04		
Isopropylbenzene (Cumene)			NV		
m,p-Xylene			NV		
Methyl acetate			NV		
Methyl iodide			NV		
Methylcyclohexane			NV		
Methylene chloride	5.90E+00	5.42E+00	5.42E+00		
Naphthalene		1.25E-01	1.25E-01		
n-Butylbenzene			NV		

TABLE 4 - SURFACE WATER EXTENT EVALUATION COMPARISON VALUES (1)

	Potential Preliminary Screening V		
Chemicals of Interest	Human Health Surface Water Risk Based Exposure Limits (^{SW} RBELs) Saltwater Fish Only ⁽³⁾	TCEQ Ecological Benchmark for Water ⁽⁴⁾	Extent Evaluation Comparison Value
n-Propylbenzene			NV
o-Xylene			NV
sec-Butylbenzene			NV
Styrene		4.55E-01	4.55E-01
tert-Butyl methyl ether (MTBE)	mum		NV
tert-Butylbenzene			NV
Tetrachloroethene		1.45E+00	1.45E+00
Toluene	1.50E+01	4.80E-01	4.80E-01
trans-1,2-Dichloroethene		6.80E-01	6.80E-01
trans-1,3-Dichloropropene	1.07E-01		1.07E-01
trans-1,4-Dichloro-2-butene			NV
Trichloroethene		9.70E-01	9.70E-01
Trichlorofluoromethane			NV
Trichlorotrifluoroethane			NV
Vinyl acetate			NV
Vinyl chloride	2.77E-01		2.77E-01
Xylene (total)		8.50E-01	8.50E-01
SVOCs	<u> </u>	· · · · · · · · · · · · · · · · · · ·	
1,2Diphenylhydrazine/Azobenzen	2.00E-03		2.00E-03
2,4,5-Trichlorophenol	7.12E-01	1.20E-02	1.20E-02
2,4,6-Trichlorophenol	2.40E-02	6.10E-02	2.40E-02
2,4-Dichlorophenol	2.90E-01		2.90E-01
2,4-Dimethylphenol	8.50E-01		8.50E-01
2,4-Dinitrophenol	5.30E+00	6.70E-01	6.70E-01
2,4-Dinitrotoluene	3.40E-02		3.40E-02
2,6-Dinitrotoluene			NV NV
2-Chloronaphthalene	1.60E+00		1.60E+00
2-Chlorophenol	1.50E-01	2.65E-01	1.50E-01
2-Methylnaphthalene		3.00E-02	3.00E-02
2-Nitroaniline			NV
2-Nitrophenol		1.47E+00	1.47E+00
3,3'-Dichlorobenzidine	2.80E-04	3.70E-02	2.80E-04
3-Nitroaniline			NV
4,6-Dinitro-2-methylphenol			NV

TABLE 4 - SURFACE WATER EXTENT EVALUATION COMPARISON VALUES (1)

	Potential Preliminary Screening V	Potential Preliminary Screening Values (PSVs) from Table 20 of RI/FS Work Plan ⁽²⁾							
Chemicals of Interest	Human Health Surface Water Risk Based Exposure Limits (^{SW} RBELs) Saltwater Fish Only ⁽³⁾	TCEQ Ecological Benchmark for Water ⁽⁴⁾	Extent Evaluation Comparison Value						
4-Bromophenyl phenyl ether			NV						
4-Chloro-3-methylphenol			NV						
4-Chloroaniline			NV						
4-Chlorophenyl phenyl ether			NV						
4-Nitroaniline		****	NV						
4-Nitrophenol		3.59E-01	3.59E-01						
Acenaphthene	9.90E-01	4.04E-02	4.04E-02						
Acenaphthylene			NV						
Acetophenone			NV						
Aniline			NV						
Anthracene	4.00E+01	1.80E-04	1.80E-04						
Atrazine (Aatrex)			NV						
Benzaldehyde			NV						
Benzidine			NV						
Benzo(a)anthracene			NV						
Benzo(a)pyrene			NV						
Benzo(b)fluoranthene			NV						
Benzo(g,h,i)perylene			NV						
Benzo(k)fluoranthene			NV						
Benzoic acid			NV						
Benzyl alcohol			NV						
Biphenyl			NV						
Bis(2-Chloroethoxy)methane			NV						
Bis(2-Chloroethyl)ether			NV						
Bis(2-Chloroisopropyl)ether			NV						
Bis(2-Ethylhexyl)phthalate			NV						
Butyl benzyl phthalate	1.90E+00	1.47E-01	1.47E-01						
Caprolactam			NV						
Carbazole			NV						
Chrysene			NV						
Dibenz(a,h)anthracene			NV						
Dibenzofuran		6.50E-02	6.50E-02						
Diethyl phthalate	4.40E+01	4.42E-01	4.42E-01						
Dimethyl phthalate	1.10E+03	5.80E-01	5.80E-01						

TABLE 4 - SURFACE WATER EXTENT EVALUATION COMPARISON VALUES (1)

	Potential Preliminary Screening	Potential Preliminary Screening Values (PSVs) from Table 20 of RI/FS Work Plan ⁽²⁾							
Chemicals of Interest	Human Health Surface Water Risk Based Exposure Limits (^{SW} RBELs) Saltwater Fish Only ⁽³⁾	TCEQ Ecological Benchmark for Water ⁽⁴⁾	Extent Evaluation Comparison Value						
Di-n-butyl phthalate	4.50E+00	5.00E-03	5.00E-03						
Di-n-octyl phthalate			NV						
Fluoranthene	1.40E-01	2.96E-03	2.96E-03						
Fluorene	5.30E+00	5.00E-02	5.00E-02						
Hexachlorobenzene			NV						
Hexachlorocyclopentadiene	1.10E+00	7.00E-05	7.00E-05						
Hexachloroethane	1.85E-01	9.40E-03	9.40E-03						
Indeno(1,2,3-cd)pyrene			NV						
Isophorone	9.60E+00	6.50E-01	6.50E-01						
m,p-Cresol			NV						
Nitrobenzene	1.56E-01	6.68E-02	6.68E-02						
n-Nitrosodimethylamine	3.00E-02	1.65E+02	3.00E-02						
n-Nitrosodi-n-propylamine	5.10E-03	1.20E-01	5.10E-03						
n-Nitrosodiphenylamine	6.00E-02	1.65E+02	6.00E-02						
o-Cresol	8.74E+00	5.10E-01	5.10E-01						
Pentachlorophenol	9.00E-02	9.60E-03	9.60E-03						
Phenanthrene		4.60E-03	4.60E-03						
Phenol	1.70E+03	2.75E+00	2.75E+00						
Pyrene	4.00E+00	2.40E-04	2.40E-04						
Pyridine	8.89E+00		8.89E+00						
· · · · · · · · · · · · · · · · · · ·									
Chloride			NV						
Sulfate	<u></u> '		NV						
Total Dissolved Solids(TDS)			NV						
Total Suspended Solids			NV						
Total Organic Carbon			NV						
Hardness	<u></u>		NV						

- 1. All values in mg/L.
- 2. Values from Table 20 of RI/FS Work Plan (updated to reflect changes since 2005 where applicable).
- 3. From TCEQ Aquatic Life Surface Water RBEL Table and Human Health Surface Water RBEL Table.
- 4. From Table 3-2 of TCEQ "Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas."
- 5. Metals values are for total concentrations unless indicated otherwise.
- 6. NV = No Preliminary Screening Value.

TABLE 5 - FISH TISSUE DATA

Sample ID	4,4'-DDE	4,4'-DDT	Benzo(a) anthracene	Benzo (a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Hexachloro benzene	Indeno(1,2,3- cd)pyrene	Lead	Silver	% Moisture	% Lipids
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		ļ
BLUE CRAB														
IW-BC-00401	<0.00723	<0.00578	<0.056	<0.035	<0.045	<0.038	<0.029	<0.047	<0.056	<0.023	<0.19	<0.053	80.1	0.07
IW-BC-00402	<0.00716	<0.00572	<0.584	<0.359	<0.467	<0.392	<0.298	<0.494	<0.58	<0.235	<0.19	<0.053	81	0.1
IW-BC-00403 IW-BC-00404	<0.00745 <0.00738	<0.00595 <0.00589	<0.056 <0.057	<0.035 <0.035	<0.045 <0.045	<0.038 <0.038	<0.029	<0.047	<0.056	<0.023	<0.19	<0.053	81.3	0.33
IW-BC-00404	<0.00738	<0.00578	<0.057	<0.035	<0.045	<0.038	<0.029 <0.029	<0.048 <0.048	<0.056 <0.056	<0.023 <0.023	<0.19 <0.19	<0.053 <0.053	78.8 80.5	0.08
IW-BC-00406	<0.00723	<0.00578	<0.057	<0.352	<0.458	<0.384	<0.029	<0.484	<0.056	<0.023	<0.19	<0.053	79.9	0.02
IW-BC-00409	<0.00738	<0.00589	< 0.567	<0.348	<0.458	<0.38	<0.289	<0.479	<0.562	<0.229	<0.19	0.11 J	80	0.02
IW-BC-00410	<0.0073	<0.00583	< 0.561	<0.345	<0.449	<0.377	<0.286	<0.475	<0.558	<0.226	<0.19	0.078 J	83.3	0.02
IW-BC-00411	<0.00745	<0.00595	< 0.058	<0.036	<0.047	<0.039	<0.03	<0.049	<0.058	<0.024	<0.19	<0.053	79.9	0.01
								•						
RED DRUM														
IW-RD-00001	<0.0073	<0.00583	<0.058	<0.036	<0.047	<0.039	<0.03	<0.049	<0.058	<0.024	<0.19	<0.053	76.6	0.06
IW-RD-00002	<0.00716	<0.00572	<0.057	<0.035	<0.046	<0.038	<0.029	<0.048	<0.056	<0.023	<0.19	<0.053	80.7	0.12
IW-RD-00003	<0.00723	<0.00578	<0.584	<0.359	<0.467	<0.392	<0.298	<0.494	<0.58	<0.235	<0.19	<0.053	79	2.77
IW-RD-00004	<0.00745	<0.00595	<0.567	<0.348	<0.453	<0.38	<0.289	<0.479	<0.562	<0.229	<0.19	<0.053	81.8	0.03
IW-RD-00005 IW-RD-00006	<0.0073 <0.00745	<0.00583 <0.00595	<0.567 <0.572	<0.348	<0.453	<0.38 <0.384	<0.289	<0.479	< 0.562	<0.229	<0.19	<0.053	78.7	0.16
TW-RD-00006	0.00743	<0.00393	<0.372	<0.352	<0.458	<0.384	<0.292	<0.484	<0.568	<0.231	<0.19	<0.053	79.6	0.01
SOUTHERN							<u> </u>	I	l					
FLOUNDER													1	
IW-SF-00301	<0.00745	<0.00595	<0.058	< 0.036	<0.046	<0.039	<0.029	<0.049	<0.058	<0.023	<0.19	0.22 J	78	0.49
IW-SF-00302	< 0.0073	< 0.00583	< 0.056	< 0.035	0.048 J	<0.038	<0.029	<0.047	< 0.056	<0.023	<0.19	<0.053	78.6	1.24
IW-SF-00303	<0.0073	<0.00583	< 0.057	< 0.352	< 0.458	< 0.384	<0.029	<0.484	<0.056	<0.023	<0.19	<0.053	77.3	1.24
IW-SF-00304	<0.00723	<0.00578	< 0.057	<0.348	< 0.453	<0.38	< 0.029	<0.479	< 0.056	<0.023	<0.19	< 0.053	77.8	2.19
IW-SF-00305	<0.00738	<0.00589	<0.561	<0.345	<0.449	< 0.377	<0.286	< 0.475	<0.558	< 0.226	<0.19	<0.053	78.9	0.1
IW-SF-00306	<0.00745	<0.00595	<0.584	< 0.359	<0.467	<0.392	<0.298	<0.494	<0.58	<0.235	<0.19	<0.053	77.7	0.1
IW-SF-00307	<0.00745	<0.00595	<0.561	<0.345	<0.449	<0.377	<0.286	<0.475	<0.558	<0.226	<0.19	<0.053	79.1	0.08
IW-SF-00308	<0.00716	<0.00572	<0.578 <0.584	<0.355	<0.462	<0.388	<0.295	<0.489	<0.574	<0.233	<0.19	<0.053	78.3	0.06
IW-SF-00309	<0.00738	<0.00589	<0.584	< 0.359	<0.467	<0.392	<0.298	<0.494	<0.58	<0.235	<0.19	<0.053	77.4	0.06
SPECKLED	Τ				1	I	1			1	T	Ι΄	1	
TROUT	1				1									ŀ
IW-ST-00101	<0.00745	<0.00595	<0.057	<0.035	<0.045	<0.038	<0.029	<0.048	<0.056	<0.023	<0.19	<0.053	77.9	0.08
IW-ST-00101	<0.00745	<0.00595	<0.057	<0.036	0.049 J	<0.039	<0.023	<0.049	<0.058	<0.023	<0.19	<0.053	73	1.13
IW-ST-00103	<0.00738	<0.00589	<0.058	<0.036	<0.047	<0.039	<0.03	<0.049	<0.058	<0.024	<0.19	<0.053	76.2	0.31
IW-ST-00104	0.012	< 0.00589	<0.058	< 0.359	< 0.467	<0.392	<0.03	<0.494	<0.058	<0.024	<0.19	0.18 J	76.4	1.02
IW-ST-00105	< 0.00745	< 0.00595	< 0.057	< 0.352	< 0.458	< 0.384	<0.029	< 0.484	< 0.056	< 0.023	<0.19	<0.053	73.6	1.41
IW-ST-00106	< 0.00716	<0.00572	<0.056	< 0.345	<0.449	< 0.377	<0.029	< 0.475	< 0.056	< 0.023	<0.19	<0.053	75.3	0.72
IW-ST-00107	<0.00738	<0.00589	<0.058	<0.036	< 0.046	<0.039	<0.029	<0.049	<0.058	< 0.023	<0.19	<0.053	77.1	2.87
IW-ST-00108	< 0.00723	<0.00578	<0.058	< 0.036	< 0.046	< 0.039	<0.029	<0.049	<0.058	< 0.023	<0.19	<0.053	75.1	0.79
IW-ST-00109	0.016 J	<0.00595	<0.057	<0.176	<0.229	<0.192	<0.029	<0.242	<0.056	<0.023	<0.19	<0.053	75	0.49

TABLE 5 - FISH TISSUE DATA

Sample ID	4,4'-DDE	4,4'-DDT	Benzo(a) anthracene	Benzo (a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	(nrvcene	Dibenz(a,h) anthracene	Hexachloro benzene	Indeno(1,2,3- cd)pyrene	Lead	Silver	% Moisture	% Lipids
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		
DUPLICATES														
IW-BC-00405 (DUP)	0.011	< 0.00578	< 0.057	< 0.035	< 0.045	< 0.038	< 0.029	< 0.048	< 0.056	< 0.023	<0.19	0.067 J	80.7	0.02
IW-SF-00302 (DUP)	< 0.00723	<0.00578	< 0.056	< 0.035	0.049 J	< 0.038	< 0.029	< 0.047	< 0.056	< 0.023	<0.19	< 0.053	79.2	0.07
IW-ST-00105 (DUP)	< 0.00723	<0.00578	<0.058	< 0.359	< 0.467	<0.392	< 0.03	<0.494	< 0.058	< 0.024	0.24 J	< 0.053	72.1	0.36

1. Data Qualifier: J = estimated value.

2. All concentrations reported on a wet weight basis.

TABLE 6 - EXTENT EVALUATION COMPARISON VALUES - WESTERN EXTENT OF SOUTH AREA SOILS(1)

		Potential Pre	liminary Screenin	g Values (PSVs)	from Table 16 of R	I/FS Work Plan ⁽²⁾			Potential Back	ground Values	
Chemicals of Interest	EPA Region 6 Soil Screening Criteria ⁽³⁾	Tot Soil _{Comb} (4)	GWSoil _{Class 3} (5)	Air Soil Inh-V (6)	AlrGW Soil _{Inh-V} (7)	EPA Ecological Soil Screening Level ⁽⁸⁾	TCEQ Ecological Benchmark ⁽⁹⁾	PSV	TCEQ ⁽¹¹⁾	Site-Specific(12)	Extent Evaluation Comparison Value
METALS			<u> </u>				I				
Aluminum	7.6E+04	6.4E+04 ⁽¹³⁾	1E+06 ⁽¹³⁾					6.4E+04	3.0E+04		6.45.04
Antimony	3.1E+01	1.5E+01	2.7E+02			2.7E-01 ***	5.0E+00 +	2.7E-01	1.0E+00		6.4E+04 1.0E+00
Arsenic	3.9E-01	2.4E+01	2.5E+02			1.8E+01	1.8E+01 +	3.9E-01	5.9E+00	8.7E+00	
Barium	5.5E+03	7.8E+03 ⁽¹³⁾	2.2E+04			3.3E+02 *				1	8.7E+00
Beryllium	1.5E+02	3.8E+01	9.2E+01				3.3E+02	3.3E+02	3.0E+02	4.6E+02	4.6E+02
Boron	1.6E+04	1.6E+04	J.2L101			2.1E+01 ***	1.0E+01 +	1.0E+01	1.5E+00		1.0E+01
Cadmium	3.9E+01	5.2E+01	7.5E+01				5.0E-01 +	5.0E-01	3.0E+01		3.0E+01
Chromium	3.5E101	2.3E+04	1.2E+05			3.6E-01 ***	3.2E+01 +	3.6E-01			3.6E-01
Chromium (VI)	3.0E+01	1.2E+02	1.2E+03 1.4E+03			0.15.01.444	4.0E-01	4.0E-01	3.0E+01	2.4E+01	3.0E+01
		3.8E+03 ⁽¹³⁾				8.1E+01 ***		3.0E+01			3.0E+01
Cobalt	9.0E+02		6.6E+04 ⁽¹³⁾			1.3E+01	1.3E+01 +	1.3E+01	7.0E+00		1.3E+01
Copper	2.9E+03	5.5E+02	5.2E+04				6.1E+01	6.1E+01	1.5E+01	2.4E+01	6.1E+01
Iron	5.3E+04 ⁽¹⁴⁾							5.3E+04 ⁽¹⁴⁾	1.5E+04		5.3E+04
Lead	4.0E+02	5.0E+02	1.5E+02			1.1E+01 **	1.2E+02 +	1.1E+01	1.5E+01	1.8E+01	1.8E+01
Lithium	1.6E+03	1.3E+03					2.0E+00 +	2.0E+00		3.6E+01	3.6E+01
Manganese	3.2E+03	3.4E+03	5.8E+04				5.0E+02 +	5.0E+02	3.0E+02	6.5E+02	6.5E+02
Mercury	2.3E+01	2.1E+00	3.9E-01	2.4E+00	1.8E+00		1.0E-01	1.0E-01	4.0E-02	3.5E-02	1.0E-01
Molybdenum	3.9E+02	1.6E+02	2.5E+03				2.0E+00 +	2.0E+00		7.4E-01	2.0E+00
Nickel	1.6E+03	8.3E+02	7.9E+03				3.0E+01 +	3.0E+01	1.0E+01		3.0E+01
Selenium	3.9E+02	3.1E+02	1.1E+02				1.0E+00 +	1.0E+00	3.0E-01		1.0E+00
Silver	3.9E+02	9.5E+01	2.4E+01				2.0E+00 +	2.0E+00			2.0E+00
Strontium	4.7E+04	4.4E+04	3.1E+04	-				3.1E+04	1.0E+02		3.1E+04
Thallium		6.3E+00	8.7E+01				1.0E+00 +	1.0E+00	9.3E+00		9.3E+00
Tin		3.5E+04	1.0E+06	-			5.0E+01 +	5.0E+01	9.0E-01		5.0E+01
Titanium		1.0E+06						1.0E+06	2.0E+03		1.0E+06
Vanadium	7.8E+01	2.9E+02	1.7E+05	-		7.8E+00 **	2.0E+00 +	2.0E+00	5.0E+01		5.0E+01
Zinc	2.3E+04	9.9E+03	1.2E+05	-			1.2E+02	1.2E+02	3.0E+01	2.8E+02	2.8E+02
PESTICIDES					<u> </u>					1	2.02.02
4,4'-DDD	2.4E+00	1.4E+01	6.5E+02					2.4E+00			2.4E+00
4,4'-DDE	1.7E+00	1.0E+01	5.9E+02					1.7E+00			1.7E+00
4,4'-DDT	1.7E+00	5.4E+00	7.4E+02	6.2E+02	2.2E+05			1.7E+00			1.7E+00
Aldrin	2.9E-02	5.0E-02	5.1E+00	4.3E+00	5.5E+02			2.9E-02			2.9E-02
alpha-BHC	9.0E-02	2.5E-01	4.0E-01	7.2E+00	5.4E+02			9.0E-02			9.0E-02
beta-BHC	3.2E-01	9.2E-01 ⁽¹³⁾	1.4E+00 ⁽¹³⁾	3.7E+01 ⁽¹³⁾	4.2E+03 ⁽¹³⁾			3.2E-01			3.2E-01
alpha-Chlordane		1.3E+01 ⁽¹³⁾	3.7E+04 ⁽¹³⁾	2.1E+03 ⁽¹³⁾	1.0E+06 ⁽¹³⁾			1.3E+01 ⁽¹³⁾			1.3E+01 ⁽¹³⁾
delta-BHC		2.9E+00	8.7E+00	5.2E+01	8.0E+03			2.9E+00			2.9E+00
Dieldrin	3.0E-02	1.5E-01	2.4E+00	1.6E+01	7.0E+03	3.2E-05 ***		3.2E-05			3.2E-05
Endosulfan I		4.7E+01	1.5E+03	9.6E+01	3.7E+04			4.7E+01			3.2E-05 4.7E+01
Endosulfan II		2.7E+02	4.6E+03					2.7E+02			2,7E+02
Endosulfan sulfate		3.8E+02	2.3E+05					3.8E+02			3.8E+02

TABLE 6 - EXTENT EVALUATION COMPARISON VALUES - WESTERN EXTENT OF SOUTH AREA SOILS(1)

	1	Potential Pre	liminary Screenin	g Values (PSVs)	from Table 16 of R	I/FS Work Plan ⁽²⁾			Potential Back	ground Values	
Chemicals of Interest	EPA Region 6 Soil Screening Criteria ⁽³⁾	Tot Soil _{Comb} (4)	GWSoil _{Class 3} (5)	AirSoil _{Inh-V} ⁽⁶⁾	AlrGWSoil _{Inh-V} (7)	EPA Ecological Soil Screening Level ⁽⁸⁾	TCEQ Ecological Benchmark ⁽⁹⁾	PSV	TCEQ ⁽¹¹⁾	Site-Specific ⁽¹²⁾	Extent Evaluation Comparison Value
2-Chlorotoluene	1.6E+02	8.3E+02	4.5E+02	2.2E+03	9.2E+03			1.6E+02			1.6E+02
2-Hexanone		5.6E+01	1.9E+02	5.7E+01	2.6E+02			5.6E+01			5.6E+01
4-Chlorotoluene		2.5E+00	1.9E+03 ⁽¹³⁾	2.5E+00	1.1E+01			2.5E+00			
4-Isopropyltoluene		2.5E+03	1.2E+04	3.5E+03	2.8E+04			2.5E+00 2.5E+03			2.5E+00 2.5E+03
4-Methyl-2-pentanone	5.8E+03	5.4E+03	2.5E+02	3.0E+04	1.1E+05			2.5E+02			2.5E+03 2.5E+02
Acetone	7.0E+04	5.4E+03	2.1E+03	5.8E+03	3.2E+04			2.1E+03			2.3E+02 2.1E+03
Acrolein	1.0E-01	5.7E-01	1.2E+00	5.8E-01	8.8E+00	-		1.0E-01			1.0E-01
Acrylonitrile	2.1E-01	2.2E+00	1.7E-01	2.7E+00	7.4E+00			1.7E-01			1.7E-01
Benzene	6.6E-01	4.8E+01 ⁽¹³⁾	1.3E+00	8.4E+01 ⁽¹³⁾	6.0E+01 ⁽¹³⁾			6.6E-01			6.6E-01
Bromobenzene	7.3E+01	7.9E+01 ⁽¹³⁾	2.9E+02	8.3E+01 ⁽¹³⁾	2.9E+02 ⁽¹³⁾			7.3E+01		 	7.3E+01
Bromodichloromethane	1.0E+00	9.8E+01	3.3E+00		2.52.02			1.0E+00			1.0E+00
Bromoform	6.2E+01	2.8E+02	3.2E+01	4.3E+02	1.8E+03			3.2E+01			3.2E+01
Bromomethane	3.9E+00	2.9E+01	6,5E+00	3.9E+01	1.1E+01			3.9E+00			3.9E+00
Butanol	6.1E+03	1.8E+03	2.6E+02	2.3E+03	2.7E+04			2.6E+02			2.6E+02
Carbon disulfide	7.2E+02	3.3E+03	6.8E+02	5,5E+03	1.7E+03			6.8E+02			6.8E+02
Carbon tetrachloride	2.4E-01	9.7E+00	3.1E+00	1.2E+01	6.3E+00			2.4E-01			2.4E-01
Chlorobenzene	3.2E+02	3.2E+02 ⁽¹³⁾	5.5E+01	4.0E+02 ⁽¹³⁾	8.2E+02 ⁽¹³⁾		4.0E+01	4.0E+01			4.0E+01
Chloroethane	3.0E+00	2.3E+04	1.5E+03	7.9E+04	2.4E+04		4.02.101	3.0E+00			3.0E+00
Chloroform	2.5E-01	8.0E+00	5.1E+01	8.0E+00	5.4E+00			2.5E-01			2.5E-01
Chloromethane	1.3E+00	8.4E+01	2.0E+01	1.0E+02	1.4E+01			1.3E+00			1.3E+00
cis-1,2-Dichloroethene	4.3E+01	7.2E+02	1.2E+01	6.3E+03	3.7E+03			1.2E+01			1.2E+01
cis-1,3-Dichloropropene		7.1E+00	3.3E-01	5.3E+01	5.9E+01			3.3E-01			3.3E-01
Dibromochloromethane	1.0E+00	7.2E+01	2.5E+00					1.0E+00			1.0E+00
Dibromomethane	1.4E+02	1.4E+02	5.6E+01	1.4E+02	4.7E+02			5.6E+01			5.6E+01
Dichlorodifluoromethane	9.4E+01	1.2E+04	1.2E+04	3.9E+04	9.4E+03			9.4E+01			9.4E+01
Ethylbenzene	2.3E+02	4.0E+03	3.8E+02	7.9E+03	1.1E+04			2.3E+02			2.3E+02
Hexachlorobutadiene	6.2E+00	1.2E+01	1.6E+02 ⁽¹³⁾	1.5E+01	1:6E+02			6.2E+00			6.2E+00
Isopropylbenzene (Cumene)	3.7E+02	3.0E+03	1.7E+04	4.8E+03	4.0E+04			3.7E+02			3.7E+02
Methyl acetate	2.2E+04	4.5E+03	2.4E+03	4.7E+03	1.7E+04			2.4E+03			2.4E+03
Methyl iodide		5.2E+01	5.7E+00	9.5E+01	3.6E+01	-		5.7E+00			5.7E+00
Methylcyclohexane	1.4E+02	2.2E+04	7.8E+05	2.4E+04	1.2E+04			1.4E+02			1.4E+02
Methylene chloride	8.9E+00	2.6E+02	6.5E-01	3.9E+02	2.2E+02			6.5E-01			6.5E-01
Naphthalene	1.2E+02	1.2E+02	1.6E+03	1.4E+02	1.3E+03			1.2E+02			1.2E+02
n-Butylbenzene	1.4E+02	1.5E+03	6.1E+03	3.4E+03	2.9E+04			1.4E+02			1.4E+02
n-Propylbenzene	1.4E+02	1.6E+03	2.2E+03	3.3E+03	1.8E+04			1.4E+02			1.4E+02
o-Xylene	2.8E+02	5.6E+03 ⁽¹³⁾	3.5E+03	5.8E+03 ⁽¹³⁾	5.7E+04 ⁽¹³⁾			2.8E+02			2.8E+02
sec-Butylbenzene	1.1E+02	1.6E+03	4.2E+03	2.9E+03	2.2E+04			1.1E+02			1.1E+02
Styrene	1.7E+03	7.0E+03	1.6E+02	1.2E+04	6.8E+04		3.0E+02 +	1.6E+02			1.6E+02
tert-Butyl methyl ether (MTBE)	1.7E+01	5.9E+02	3.1E+01	7.1E+02	6.6E+02			1.7E+01			1.7E+01
tert-Butylbenzene	1.3E+02	1.4E+03	5.0E+03	2.4E+03	1.6E+04			1.3E+02			1.3E+02

TABLE 6 - EXTENT EVALUATION COMPARISON VALUES - WESTERN EXTENT OF SOUTH AREA SOILS(1)

		Potential Pre	liminary Screenin	g Values (PSVs)	from Table 16 of R	I/FS Work Plan ⁽²⁾		- :	Potential Back	ground Values	
Chemicals of Interest	EPA Region 6 Soil Screening Criteria ⁽³⁾	Tot Soil _{Comb} (4)	GWSoil _{Cluss 3} (5)	AirSoil _{Inh-V} (6)	AirGW Soil Inh-V(7)	EPA Ecological Soil Screening Level ⁽⁸⁾	TCEQ Ecological Benchmark ⁽⁹⁾	PSV	TCEQ ⁽¹¹⁾	Site-Specific ⁽¹²⁾	Extent Evaluation Comparison Value
Tetrachloroethene	5.5E-01	8.5E+01	2.5E+00	3.2E+02	2.1E+02			5.5E-01			5.5E-01
Toluene	5.2E+02	5.6E+03 ⁽¹³⁾	4.1E+02	4.0E+04 ⁽¹³⁾	4.1E+04 ⁽¹³⁾		2.0E+02 +	2.0E+02			2.0E+02
trans-1,2-Dichloroethene	6.3E+01	3.7E+02 ⁽¹³⁾	2.5E+01	4.7E+02 ⁽¹³⁾	2.4E+02 ⁽¹³⁾			2.5E+01			2.5E+01
trans-1,3-Dichloropropene		2.6E+01	1.8E+00	4.6E+01	4.8E+01			1.8E+00			1.8E+00
trans-1,4-Dichloro-2-butene	'	1.7E-01		1.7E-01	6.9E-01			1.7E-01			1.7E-01
Trichloroethene	4.3E-02	9.1E+01	1.7E+00	1.1E+02	7.1E+01			4.3E-02			4.3E-02
Trichlorofluoromethane	3.9E+02	1.2E+04	6.4E+03	2.2E+04	4.6E+03			3.9E+02			3.9E+02
Trichlorotrifluoroethane	5.6E+03	2.2E+05	1.0E+06	2.4E+05	6.5E+04			5.6E+03			5.6E+03
Vinyl acetate	4.3E+02	1.5E+03	2.7E+03	1.6E+03	2.0E+03			4.3E+02			4.3E+02
Vinyl chloride	4.3E-02	3.4E+00	1.1E+00	2.1E+01	2.6E+00			4.3E-02			4,3E-02
Xylene (total)	2.1E+02	7.5E+02	6.1E+03	7.9E+02	1.3E+03			2.1E+02			2.1E+02
SVOCs					•				H.u	·	
1,2Diphenylhydrazine/Azobenzen	6.1E-01	3.6E+01 ⁽¹³⁾	8.8E+02 ⁽¹³⁾	7.1E+02 ⁽¹³⁾	9.4E+04 ⁽¹³⁾			6.1E-01			6.1E-01
2,4,5-Trichlorophenol	6.1E+03	4.1E+03	1.7E+03	1.1E+04	4.1E+05		4.0E+00 +	4.0E+00			4.0E+00
2,4,6-Trichlorophenol	4.4E+01	6.7E+01 ⁽¹³⁾	8.8E+00 ⁽¹³⁾	1.0E+03	2.3E+04		1.0E+01	8.8E+00			8.8E+00
2,4-Dichlorophenol	1.8E+02	1.9E+02	1.8E+01	6.8E+03	1.7E+05			1.8E+01			1.8E+01
2,4-Dimethylphenol	1.2E+03	8.8E+02	1.6E+02	2.6E+03	7.0E+04			1.6E+02			1.6E+02
2,4-Dinitrophenol	1.2E+02	1.3E+02	4.7E+00				2.0E+01 +	4.7E+00		 	4.7E+00
2,4-Dinitrotoluene	1.2E+02	6.9E+00	2.7E-01	1.5E+01	3.1E+02			2.7E-01			2.7E-01
2,6-Dinitrotoluene	6.1E+01	6.9E+00	2.4E-01	2.2E+01	7.3E+02			2.4E-01			2.4E-01
2-Chloronaphthalene	3.9E+03	5.0E+03	3.3E+04					3.9E+03			3.9E+03
2-Chlorophenol	6.4E+01	3.6E+02	8.2E+01	3.2E+03	5.3E+04			6.4E+01			6.4E+01
2-Methylnaphthalene		2.5E+02	8.5E+02					2.5E+02			2.5E+02
2-Nitroaniline	1.8E+02	1.2E+01 ⁽¹³⁾	1.1E+01 ⁽¹³⁾	2.4E+01 ⁽¹³⁾	7.7E+02 ⁽¹³⁾			1.1E+01			1.1E+01
2-Nitrophenol		1.0E+02	6.7E+00	4.1E+02	1.2E+04			6.7E+00			6.7E+00
3.3'-Dichlorobenzidine	1.1E+00	1.0E+01	3.1E+00		1.25.04			1.1E+00			1.1E+00
3-Nitroaniline		1.9E+01	1.3E+00	4.6E+02	1.6E+04			1.3E+00			1.3E+00
4,6-Dinitro-2-methylphenol		5.2E+00 ⁽¹³⁾	2.3E-01 ⁽¹³⁾	2.4E+01	1.0E+03			2.3E-01			2.3E-01
4-Bromophenyl phenyl ether		2.7E-01	1.8E+01	5.0E+00	5.9E+02			2.3E-01 2.7E-01			2.3E-01 2.7E-01
4-Chloro-3-methylphenol		3.3E+02	2.3E+02	1.8E+04	1.0E+06			2.7E-01 2.3E+02			2.7E-01 2.3E+02
4-Chloroaniline	2.4E+02	2.0E+02	2.2E+01	7.4E+02	2.0E+04			2.2E+01			2.3E+02 2.2E+01
4-Chlorophenyl phenyl ether		1.5E-01	1.6E+00	1.3E+00	4.2E+01			1.5E-01			1.5E-01
4-Nitroaniline		1.2E+02 ⁽¹³⁾	2.8E+00 ⁽¹³⁾	3.1E+02 ⁽¹³⁾	1.1E+04 ⁽¹³⁾			2.8E+00 ⁽¹³⁾			2.8E+00 ⁽¹³⁾
4-Nitrophenol	4.9E+02	5.1E+01	5.0E+00	8.3E+01	3.1E+03		7.0E+00	5.0E+00			5.0E+00
Acenaphthene	3.7E+03	3.0E+03	1,2E+04	_			2.0E+01 +	2.0E+01			2.0E+01
Acenaphthylene	_	3.8E+03	2.0E+04				2.02.101	3.8E+03			3.8E+03
Acetophenone	1.7E+03	1.8E+03	4.1E+02	2.5E+03	3.0E+04			4.1E+02			4.1E+02
Aniline	8.5E+01	5.9E+01	1.8E+01	6.7E+01	1.6E+03			1.8E+01			1.8E+01
Anthracene	2.2E+04	1.8E+04	3.4E+05					1.8E+04			1.8E+01
Atrazine (Aatrex)	2.2E+00	2.1E+01	1.2E+00	1.7E+03	9.8E+04			1.2E+00			1.2E+00

TABLE 6 - EXTENT EVALUATION COMPARISON VALUES - WESTERN EXTENT OF SOUTH AREA SOILS(1)

		Potential Pre	liminary Screenin	g Values (PSVs)	from Table 16 of R	I/FS Work Plan ⁽²⁾			Potential Back	ground Values	
Chemicals of Interest	EPA Region 6 Soil Screening Criteria ⁽³⁾	Tot Soil Comb (4)	GWSoilCluss 3 (5)	AirSoil _{Inh-V} ⁽⁶⁾	Air GW Soil Inh-V (7)	EPA Ecological Soil Screening Level ⁽⁸⁾	TCEQ Ecological Benchmark ⁽⁹⁾	PSV	TCEQ ⁽¹¹⁾	Site-Specific(12)	Extent Evaluation Comparison Value
Endrin	1.8E+01	8.7E+00	3.8E+01	2.4E+02	7.9E+04			8.7E+00			8.7E+00
Endrin aldehyde		1.9E+01	3.1E+04					1.9E+01		 	1.9E+01
Endrin ketone		1.9E+01	2.5E+03	9.7E+02	1.0E+06			1.9E+01			1.9E+01
gamma-BHC (Lindane)	4.4E-01	1.1E+00	4.6E-01	3.0E+02	2.5E+04			4.4E-01			4.4E-01
gamma-Chlordane		7.3E+00	2.1E+03	5.0E+02	1.6E+05			7.3E+00			7.3E+00
Heptachlor	1.1E-01	1.3E-01	9.4E+00	4.7E+00	1.9E+02			1.1E-01			1.1E-01
Heptachlor epoxide	5.3E-02	2.4E-01	2.9E+00	1.2E+01	2.2E+03			5.3E-02			5.3E-02
Methoxychlor	3.1E+02	2.7E+02	6.2E+03	1.6E+04	1.0E+06			2.7E+02			2.7E+02
Toxaphene	4.4E-01	1.2E+00	5.8E+02	4.9E+02	4.4E+05			4.4E-01			4.4E-01
PCBs	2.2E-01	1.1E+00	5.3E+02	2.8E+01	4.0E+03			2.2E-01			2,2E-01
Aroclor-1016	3.9E+00							3.9E+00			3.9E+00
Aroclor-1221	2.2E-01							2.2E-01			2.2E-01
Aroclor-1232	2.2E-01							2.2E-01			2.2E-01
Aroclor-1242	2.2E-01							2.2E-01			2.2E-01
Aroclor-1248	2.2E-01							2.2E-01			2.2E-01
Aroclor-1254	2.2E-01			-				2.2E-01			2.2E-01
Aroclor-1260	2.2E-01							2.2E-01			2.2E-01
VOCs										<u> </u>	2.25 01
1,1,1,2-Tetrachloroethane	3.0E+00	3.9E+01	7.1E+01	4.7E+01	2.9E+02			3.0E+00			3.0E+00
1,1,1-Trichloroethane	1.4E+03	3.2E+04 ⁽¹³⁾	8.1E+01	4.0E+04 ⁽¹³⁾	2.1E+04 ⁽¹³⁾			8.1E+01			8.1E+01
1,1,2,2-Tetrachloroethane	3.8E-01	4.0E+00	1.2E+00	4.6E+00	1.4E+01			3.8E-01			3.8E-01
1,1,2-Trichloroethane	8.4E-01	1.0E+01	1.0E+00	1.2E+01	2.1E+01			8.4E-01			8.4E-01
1,1-Dichloroethane	5.9E+02	6.5E+02	4.6E+01	3.2E+03	1.8E+03			4.6E+01			4.6E+01
1,1-Dichloroethene	2.8E+02	2.6E+03 ⁽¹³⁾	9.2E+02 ⁽¹³⁾	2.7E+03 ⁽¹³⁾	7.7E+02 ⁽¹³⁾			2.8E+02			2.8E+02
1,1-Dichloropropene		2.6E+01	6.7E+00	4.6E+01	1.8E+01			6.7E+00			
1,2,3-Trichloropropane	1.4E-03	8.7E-01	1.1E-01	1.4E+03	7.3E+03			1.4E-03			6.7E+00 1.4E-03
1,2,4-Trichlorobenzene	6.8E+01	6.1E+02 ⁽¹³⁾	2.4E+02	7.8E+03 ⁽¹³⁾	6.9E+04 ⁽¹³⁾		2.0E+01	2.0E+01			2.0E+01
1,2,4-Trimethylbenzene	5.2E+01	8.0E+01 ⁽¹³⁾	2.4E+03	8.1E+01 ⁽¹³⁾	4.9E+02 ⁽¹³⁾			5.2E+01			5.2E+01
1,2-Dibromo-3-chloropropane	4.6E-01	3.18E+00 ⁽¹³⁾	8.7E-02	4.2E+00	1.8E+01			8.7E-02			8.7E-02
1,2-Dibromoethane	2.8E-02	4.3E-01 ⁽¹³⁾	1.0E-02	5.0E-01 ⁽¹³⁾	1.5E+00 ⁽¹³⁾			1.0E-02			1.0E-02
1,2-Dichlorobenzene	2.8E+02	3.9E+02	8.9E+02	4.1E+02	2.2E+03			2.8E+02			2.8E+02
1,2-Dichloroethane	3.5E-01	6.4E+00	6.9E-01	7.1E+00	5.9E+00			3.5E-01			3.5E-01
1,2-Dichloropropane	3.5E-01	3.1E+01	1.1E+00	3.2E+01	3.4E+01		7.0E+02	3.5E-01			3.5E-01
1,3,5-Trimethylbenzene	2.1E+01	5.9E+01	2.7E+03	6.0E+01	3.5E+02		7.02102	2.1E+01			2.1E+01
1,3-Dichlorobenzene	9.3E+01	6.2E+01	3.4E+02	6.3E+01	1.1E+02			6.2E+01			6.2E+01
1,3-Dichloropropane		2.6E+01	3.2E+00	4.6E+01	1.2E+02			3.2E+00			3.2E+01
1,4-Dichlorobenzene	3.2E+00	2.5E+02	1.1E+02	9.1E+03	4.7E+04		2.0E+01	3.2E+00			3.2E+00 3.2E+00
2,2-Dichloropropane		3.1E+01	6.0E+00	3.2E+01	3.3E+01			6.0E+00			6.0E+00
2-Butanone	3.2E+04	2.7E+04	1.5E+03	5.9E+04	3.5E+05			1.5E+03			1.5E+03
2-Chloroethylvinyl ether		2.3E+00	1.4E-01	2.4E+00	4.4E+00			1.4E-01			1.4E-01

TABLE 6 - EXTENT EVALUATION COMPARISON VALUES - WESTERN EXTENT OF SOUTH AREA SOILS(1)

		Potential Pre	liminary Screenin	g Values (PSVs)	from Table 16 of R	I/FS Work Plan ⁽²⁾	***		Potential Backs	ground Values	
Chemicals of Interest	EPA Region 6 Soil Screening Criteria ⁽³⁾	Tot Soil _{Comb} (4)	GWSoil _{Class 3} (5)	AlrSoil _{Inh-V} (6)	AirGW Soil _{Inh-V} (7)	EPA Ecological Soil Screening Level ⁽⁸⁾	TCEQ Ecological Benchmark ⁽⁹⁾	PSV	TCEQ ⁽¹¹⁾	Site-Specific ⁽¹²⁾	Extent Evaluation Comparison Value
Benzaldehyde	6.1E+03	2.4E+02	5.3E+02	2.5E+02	1.4E+03			2.4E+02			2.4E+02
Benzidine	2.1E-03	1.3E-02	5.5E-04	3.2E-02	1.2E+00			5.5E-04			5.5E-04
Benzo(a)anthracene	6.2E-01	5.6E+00	8.9E+02	1.9E+03	1.0E+06			6.2E-01			6.2E-01
Benzo(a)pyrene	6.2E-02	5.6E-01	3.8E+02	4.4E+02	9.6E+05			6.2E-02			6.2E-02
Benzo(b)fluoranthene	6.2E-01	5.7E+00	3.0E+03	3.2E+03	1.0E+06			6.2E-01			6.2E-01
Benzo(g,h,i)perylene		1.8E+03	1.0E+06					1.8E+03			1.8E+03
Benzo(k)fluoranthene	6.2E+00	5.7E+01	3.1E+04	7.8E+04	1.0E+06			6.2E+00			6.2E+00
Benzoic acid	1.0E+05	3.5E+02	9.5E+03	3.5E+02	1.3E+04			3.5E+02			3.5E+02
Benzyl alcohol	1.8E+04	4.0E+03 ⁽¹³⁾	1.5E+03 ⁽¹³⁾	4.6E+03	1.4E+05			1.5E+03 ⁽¹³⁾			1.5E+03 ⁽¹³⁾
Biphenyl	3.0E+03	1.3E+02	1.3E+04	1.4E+02	2.7E+03		6.0E+01 +	6.0E+01			6.0E+01
Bis(2-Chloroethoxy)methane		2.5E+00	5.9E-01	5.8E+00	7.4E+01	_		5.9E-01			5.9E-01
Bis(2-Chloroethyl)ether	2.1E-01	1.4E+00	1.1E-01	1.8E+00	1.5E+01			1.1E-01			1.1E-01
Bis(2-Chloroisopropyl)ether		4.1E+01	9.5E+00	1.1E+02	8.2E+02			9.5E+00			9.5E+00
Bis(2-Ethylhexyl)phthalate	3.5E+01	4.3E+01	8.2E+03					3.5E+01			3.5E+01
Butyl benzyl phthalate	2.4E+02	5.7E+03	1.3E+05	1.3E+04	1.0E+06			2.4E+02			2.4E+02
Caprolactam	3.1E+04	1.7E+02	2.3E+03	1.7E+02	6.1E+03			1.7E+02			1.7E+02
Carbazole	2.4E+01	2.3E+02	2.3E+02					2.4E+01	~~		2.4E+01
Chrysene	6.2E+01	5.6E+02	7.7E+04	3.0E+05	1.0E+06			6.2E+01			6.2E+01
Dibenz(a,h)anthracene	6.2E-02	5.5E-01	7.6E+02	1.0E+03	1.0E+06			6.2E-02			6.2E-02
Dibenzofuran	1.5E+02	2.7E+02	1.7E+03			-		1.5E+02			1.5E+02
Diethyl phthalate	4.9E+04	1.4E+03	7.8E+03	1.5E+03	7.0E+04		1.0E+02 +	1.0E+02			1.0E+02
Dimethyl phthalate	1.0E+05	6.6E+02	3.1E+03	6.7E+02	2.2E+04		2.0E+02	2.0E+02			2.0E+02
Di-n-butyl phthalate	6.1E+03	4.4E+03	1.7E+05	1.5E+04	1.0E+06		2.0E+02 +	2.0E+02			2.0E+02
Di-n-octyl phthalate	2.4E+03	1.3E+03 ⁽¹³⁾	1.0E+06	2.8E+05 ⁽¹³⁾	1.0E+06 ⁽¹³⁾			1.3E+03 ⁽¹³⁾			1.3E+03 ⁽¹³⁾
Fluoranthene	2.3E+03	2.3E+03	9.6E+04					2.3E+03			2.3E+03
Fluorene	2.6E+03	2.3E+03	1.5E+04				3,0E+01	3.0E+01			3.0E+01
Hexachlorobenzene	3.0E-01	1.0E+00	5.6E+01	9.8E+00	4.2E+02			3.0E-01			3.0E-01
Hexachlorocyclopentadiene	3.7E+02	7.2E+00	9.6E+02	7.3E+00	1.4E+02		1.0E+01 +	7.2E+00			7.2E+00
Hexachloroethane	3.5E+01	6.7E+01	9.2E+01	5.0E+02	6.9E+03			3.5E+01			3.5E+01
Indeno(1,2,3-cd)pyrene	6.2E-01	5.7E+00	8.7E+03	1.3E+04	1.0E+06			6.2E-01			6.2E-01
Isophorone	5.1E+02	1.2E+03	1.5E+02	1.4E+03	2.1E+04			1.5E+02			1.5E+02
Nitrobenzene	2.0E+01	3.0E+01	4.4E+00	2.9E+02	2.9E+03		4.0E+01	4.4E+00			4.4E+00
n-Nitrosodimethylamine	9.5E-03	1.9E-02 ⁽¹³⁾	6.2E-04 ⁽¹³⁾	3.4E-02 ⁽¹³⁾	9.7E-01 ⁽¹³⁾			6.2E-04			6.2E-04
n-Nitrosodi-n-propylamine	7.0E-02	4.0E-01	1.8E-02					1.8E-02			1.8E-02
n-Nitrosodiphenylamine	9.9E+01	5.7E+02	1.4E+02				2.0E+01	2.0E+01			2,0E+01
o-Cresol	3.1E+03	1.0E+03	3.6E+02	1.5E+03	3.8E+04			3.6E+02			3.6E+02
Pentachlorophenol	3.0E+00	2.4E+00	9.2E-01	2.3E+02	1.6E+04	1.8E-03 **	5.0E+00 +	1.8E-03			1.8E-03
Phenanthrene		1.7E+03	2.1E+04					1.7E+03			1.7E+03
Phenol	1.8E+04	1.6E+03	9.6E+02	1.7E+03	4.7E+04		3.0E+01	3.0E+01	_		3.0E+01
Pyrene	2.3E+03	1.7E+03	5.6E+04					1.7E+03			1.7E+03
Pyridine	6.1E+01	4.8E+01	3.5E+00	1.2E+02	4.1E+01			3.5E+00			3.5E+00

TABLE 6 - EXTENT EVALUATION COMPARISON VALUES - WESTERN EXTENT OF SOUTH AREA SOILS⁽¹⁾

Potential Preliminary Screening Values (PSVs) from Table 16 of RI/FS Work Plan ⁽²⁾										Potential Background Values		
Chemicals of Interest	EPA Region 6 Soil Screening Criteria ⁽³⁾	Tot Soil _{Comb} (4)	GWSoil _{Class 3} (5)	AirSoil _{Inb-V} ⁽⁶⁾	AlrGWSoil _{Inh-V} (7)	EPA Ecological Soil Screening Level ⁽⁸⁾	TCEQ Ecological Benchmark ⁽⁹⁾	PSV	TCEQ ⁽¹¹⁾	Site-Specific ⁽¹²⁾	Extent Evaluation Comparison Value	
Sulfate								NV			NV	
Chloride								NV			NV	

- 1. All values in mg/kg.
- 2. Values from Table 16 of RI/FS Work Plan (updated to reflect changes in toxicity data since 2005 where applicable).
- 3. From EPA's "Region 6 Human Health Medium-Specific Screening Levels 2004-2005". Residential Value.
- 4. TotSoilComb PCL = TCEQ Protective Concentration Level for 30 acre source area Residential total soil combined pathway (includes inhalation; ingestion; dermal pathways).
- 5. ON Soil Class PCL = TCEQ Protective Concentration Level for 30 acre source area Residential soil-to-groundwater leaching for Class 3 groundwater pathway.
- 6. Air Soilland PCL = TCEQ Protective Concentration Level for 30 acre source area Residential soil-to-air pathway (inhalation of volatiles and particulates).
- 7. Air GW-Soilmbay PCL = TCEQ Protective Concentration Level for 30 acre source area Residential soil and groundwater-to-air pathway (inhalation of volatiles and particulates).
- 8. From EPA's "Ecological Soil Screening Level". Values indicated with "*" are based on soil Invertebrates. Values indicated with "**" are based on avian wildlife.

 Values indicated with "**" are based on mammalian wildlife. All other values are based on plants.
- 9. From Table 3-4 of TCEQ "Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas". Values indicated with "+" are based on plant exposure.

 All other values are based on earthworm exposure.
- 10. NV = No Preliminary Screening Value.
- 11. From 30 TAC 350.51(m)
- 12. 95% UTL calculated from site-specific background samples.
- 13. Updated from Table 16 of RI/FS Workplan to reflect changes in toxicity data from 2005 to 2008 indicated in TCEQ PCL tables.
- 14. Updated from Table 16 of RI/FS Workplan to reflect revised reference dose for iron.

TABLE 7 - DETECTED SOIL CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES - WESTERN EXTENT OF SOUTH AREA

Sample Location	Sample Depth (ft)	Chemical of Interest	Concentration (mg/kg)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/kg)
PHASE I SAMPLES				
		Benzo(a)anthracene	2.28J	0.62
		Benzo(a)pyrene	3.6J	0.062
		Benzo(b)fluoranthene	2.27Ј	0.62
	0.05	Copper	105	61
	0-0.5	Dibenz(a,h)anthracene	0.313	0.062
		Indeno(1,2,3-cd)pyrene	1.39Ј	0.62
		Lead	208	17.93
SA1SB15		Zinc	877	280
SAISBIS		Benzo(a)anthracene	4.21J	0.62
		Benzo(a)pyrene	4.88J	0.062
		Benzo(b)fluoranthene	5.34J	0.62
	1-2	Copper	73.2	61
	1-2	Dibenz(a,h)anthracene	0.817	0.062
		Indeno(1,2,3-cd)pyrene	4.37J	0.62
	1	Lead	395	17.93
		Zinc	1090	280

TABLE 7 - DETECTED SOIL CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES - WESTERN EXTENT OF SOUTH AREA

Sample Location	Sample Depth (ft)	Chemical of Interest	Concentration (mg/kg)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/kg)
		Benzo(a)anthracene	1.29J	0.62
		Benzo(a)pyrene	1.95J	0.062
		Benzo(b)fluoranthene	2.05J	0.62
	0-0.5	Chromium	40.6	30
		Dibenz(a,h)anthracene	0.347	0.062
		Indeno(1,2,3-cd)pyrene	1.44J	0.62
		Lead	45.8	17.93
		Aroclor-1254	3.42	0.22
SA2SB16		Benzo(a)anthracene	1.71J	0.62
SA25B10		Benzo(a)pyrene	2.13J	0.062
		Benzo(b)fluoranthene	2.76Ј	0.62
		Chromium	45.6	30
	1-2	Copper	128	61
		Dibenz(a,h)anthracene	0.322	0.062
		Indeno(1,2,3-cd)pyrene	1.31J	0.62
		Lead	702	17.93
		Molybdenum	10.4	2
		Zinc	525	280

TABLE 7 - DETECTED SOIL CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES - WESTERN EXTENT OF SOUTH AREA

Sample Location	Sample Depth (ft)	Chemical of Interest	Concentration (mg/kg)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/kg)
		Benzo(a)anthracene	2.41J	0.62
		Benzo(a)pyrene	3.41J	0.062
		Benzo(b)fluoranthene	4.66J	0.62
	0-0.5	Copper	207	61
	0-0.5	Dibenz(a,h)anthracene	0.465	0.062
		Indeno(1,2,3-cd)pyrene	1.47Ј	0.62
		Molybdenum	2.24	2
SA3SB17		Zinc	412	280
SASSB17		Aroclor-1254	11.5	0.22
		Benzo(a)pyrene	0.608J	0.062
		Benzo(b)fluoranthene	0.835J	0.62
	1-2	Copper		61
	1-2	Dibenz(a,h)anthracene	0.177	0.062
		Lead	252	17.93
		Mercury	0.85	0.1
		Zinc	865	280
		Aroclor-1254	0.734J+	0.22
		Barium	540J	10
SA4SB18	0-0.5	Benzo(a)pyrene	0.329Ј	0.062
		Lead	146Ј	17.93
		Zinc	414	280
		Aroclor-1254	0.457	0.22
		Arsenic	11.5	8.66
SA5SB19	0-0.5	Benzo(a)pyrene	0.371J	0.062
SAJSDIS	0-0.3	Lead	152J	17.93
		Molybdenum	2.69J-	2
		Zinc	412	280
SA6SB20	0-0.5	Dibenz(a,h)anthracene	0.132	0.062

TABLE 7 - DETECTED SOIL CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES - WESTERN EXTENT OF SOUTH AREA

Sample Location	Sample Depth (ft)	Chemical of Interest	Concentration (mg/kg)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/kg)
PHASE 2 SAMPLES				
L20SB01	0-0.5	Benzo(a)pyrene	0.283	0.062
DZ05D01	1-2	Lead	19Ј	17.93
L20SB02	0-0.5	Lead	19.7J	17.93
		Copper	73Ј	61
L20SB04	0-0.5	Lead	116Ј	17.93
L203D04	0-0.5	Mercury	0.72	0.1
		Zinc	453J	280
		Benzo(a)pyrene	0.759	0.062
L20SB05	0-0.5	Lead	108Ј	17.93
		Zinc	781J	280
		Aroclor-1254	0.836	0.22
T OOGDOC	0.05	Benzo(a)pyrene	0.394	0.062
L20SB06	0-0.5	Lead	290J	17.93
		Zinc	942J	280
		Aroclor-1254	1.02	0.22
		Benzo(a)pyrene	0.776	0.062
L20SB07	0-0.5	Dibenz(a,h)anthracene	0.235	0.062
		Lead	985J	17.93
		Zinc	6,510J	280

⁽¹⁾ Extent Evaluation Comparison Values from Table 6.

⁽²⁾ Data qualifiers: J = estimated value; J+ = estimated value, biased high; J- = estimated value, biased low.

TABLE 8 - EXTENT EVALUATION COMPARISON VALUES - EASTERN AND VERTICAL EXTENT IN SOIL⁽¹⁾

	Potential Prelin	ninary Screenii	ng Values (PSV Plan ⁽²⁾	s) from Table 1	5 of RI/FS Work		Potential Bac	ekground Values	Extent Evaluation Comparison Value
Chemicals of Interest	EPA Region 6 Soil Screening Criteria ⁽³⁾	TotSoil _{Comb} ⁽⁴⁾	^{GW} Soil _{Class 3} ⁽⁵⁾	Air Soil _{Inh-V} (6)	AirGW Soil _{Inb-V} (7)	PSV	TCEQ ⁽⁹⁾	Site-Specific ⁽¹⁰⁾	
METALS		<u>. </u>	<u>1</u>		<u></u>	-		<u> </u>	
Aluminum	1.0E+05	5.7E+05 ⁽¹¹⁾	1.0E+06			6.7E+04	3.0E+04		6.7E+04
Antimony	4.5E+02	3.1E+02	2.7E+02			2.7E+02	1.0E+00		2.7E+02
Arsenic	1.8E+00	2.0E+02	2.5E+02			1.8E+00	5.9E+00	8.7E+00	8.7E+00
	7.9E+04	8.9E+04 ⁽¹¹⁾	2.2E+04			2.2E+04	3.0E+02	4.6E+02	2,2E+04
Barium Beryllium	2.2E+03	2.5E+02	9.2E+01			9.2E+01	1.5E+00		9.2E+01
Boron	1.0E+05	1.9E+05	9.213101			1.0E+05	3.0E+01		1.0E+05
Cadmium	5.6E+02	8.5E+02	7.5E+01			7.5E+01	5.55.01		7.5E+01
Chromium	5.0E+02	5.7E+04	1.2E+05			5.0E+02	3.0E+01	2.4E+01	5.0E+02
Chromium (VI)	7.1E+01	1.0E+03	1.4E+03			7.1E+01	3.02.01		7.1E+01
· · · · · · · · · · · · · · · · · · ·		7.3E+03 ⁽¹¹⁾	6.6E+04 ⁽¹¹⁾		 	2.1E+03	7.0E+00		2.1E+03
Cobalt	2.1E+03					3.7E+04	1.5E+01	2.4E+01	3.7E+04
Copper	4.2E+04	3.7E+04	5.2E+04			1.0E+05	1.5E+04	2,4E+01	1.0E+05
Iron	1.0E+05		1.55.00			1.5E+02	1.5E+01	1.8E+01	1.5E+02
Lead	8.0E+02	1.6E+03 1.9E+04	1.5E+02		 	1.9E+04	1.35+01	3.6E+01	1.9E+04
Lithium	2.3E+04		5 1E:05			2.4E+04	3.0E+02	6.5E+02	2.4E+04
Manganese	3.5E+04	2.4E+04	5.1E+05		2.6E+00	3.9E-01	4.0E-02	3.5E-02	3.9E-01
Mercury	3.4E+02	3.3E+00	3.9E-01	3.3E+00			4.0E-02	7.4E-01	4.5E+03
Molybdenum	5.7E+03	4.5E+03	7.3E+03			4.5E+03	1.0E+01	7.4E-01	7.9E+03
Nickel	2.3E+04	7.9E+03	2.3E+04			7.9E+03	3.0E-01		1.1E+02
Selenium	5.7E+03	4.7E+03	1.1E+02	 -		1.1E+02	3.0E-01		7.1E+02
Silver	5.7E+03	1.7E+03	7.1E+01			7.1E+01			9.2E+04
Strontium	1.0E+05	4.9E+05	9.2E+04			9.2E+04	1.0E+02		7.8E+01
Thallium		7.8E+01	8.7E+01			7.8E+01	9.3E+00	-	
Tin		4.0E+05	1.0E+06			4.0E+05	9.0E-01		4.0E+05 1.0E+06
Titanium		1.0E+06	5 170 05			1.0E+06	2.0E+03 5.0E+01		1.1E+03
Vanadium	1.1E+03	2.3E+03	5.1E+05			1.1E+03	3.0E+01	2.8E+02	1.1E+03 1.0E+05
Zinc	1.0E+05	2.5E+05	3.5E+05		<u> </u>	1.0E+05	3.0E+01	2.6E+02	1.0E+05
PESTICIDES	1.15.0	1.051.03	1.572.02	T	 	1 1E+01	1	T	1.1E+01
4,4'-DDD	1.1E+01	1.0E+02	1.5E+03			1.1E+01 7.8E+00			7.8E+00
4,4'-DDE	7.8E+00	7.3E+01	1.3E+03	1.00-02	2.7E±05				7.8E+00
4,4'-DDT	7.8E+00	6.8E+01	1.7E+03	1.0E+03	3.7E+05 9.2E+02	7.8E+00			1.1E-01
Aldrin	1.1E-01	9.7E-01	1.2E+01	7.2E+00	9.2E+02 9.1E+02	1.1E-01			4.0E-01
alpha-BHC	4.0E-01	2.9E+00	8.9E-01	1.2E+01		4.0E-01			5.4E+01
alpha-Chlordane		5.4E+01	8.3E+04	3.5E+03	1.0E+06	5.4E+01			1.4E+00
beta-BHC	1.4E+00	1.1E+01	3.2E+00	6.2E+01	7.1E+03	1.4E+00			1.4E+00 1.2E+01
delta-BHC		1.2E+01	1.9E+01	8.8E+01	1.3E+04	1.2E+01			1.2E+01 1.2E-01
Dieldrin	1,2E-01	1.1E+00	5.5E+00	2.7E+01	1.2E+04	1.2E-01			1.2E-01 1.2E+02
Endosulfan I		1.2E+02	4.6E+03	1.3E+02	5.2E+04	1.2E+02			
Endosulfan II	_	4.1E+03	1.4E+04			4.1E+03			4.1E+03

TABLE 8 - EXTENT EVALUATION COMPARISON VALUES - EASTERN AND VERTICAL EXTENT IN SOIL⁽¹⁾

	Potential Prelin	ninary Screenin	ng Values (PSV: Plan ⁽²⁾	s) from Table 1	5 of RI/FS Work		Potential Bac	kground Values	Extent Evaluation Comparison Value
Chemicals of Interest	EPA Region 6 Soil Screening Criteria (3)	TotSoil _{Comb} (4)	GWSoil _{Class 3} (5)	AirSoil _{Inh-V} ⁽⁶⁾	AirGW Soil Inh-V (7)	PSV	TCEQ ⁽⁹⁾	Site-Specific ⁽¹⁰⁾	
Endosulfan sulfate		4.1E+03	7.0E+05			4.1E+03			4.1E+03
Endrin	2.1E+02	1.3E+02	3.8E+01	3.4E+02	1.1E+05	3.8E+01			3.8E+01
Endrin aldehyde		2.0E+02	9.4E+04			2.0E+02			2.0E+02
Endrin ketone		1.8E+02	7.6E+03	1.4E+03	1.0E+06	1.8E+02			1.8E+02
gamma-BHC (Lindane)	1.9E+00	1.8E+01	4.6E-01	4.2E+02	3.5E+04	4.6E-01			4.6E-01
gamma-Chlordane		5.1E+01	4.6E+03	8.4E+02	2.6E+05	5.1E+01			5.1E+01
Heptachlor	4.3E-01	2.8E+00	9.4E+00	7.9E+00	3.2E+02	4.3E-01			4.3E-01
Heptachlor epoxide	2.1E-01	1.9E+00	2.9E+00	2.1E+01	3.8E+03	2.1E-01			2.1E-01
Methoxychlor	3.4E+03	3.0E+03	6.2E+03	2.2E+04	1.0E+06	3.0E+03			3.0E+03
Toxaphene	1.7E+00	1.7E+01	5.8E+02	8.3E+02	7.5E+05	1.7E+00	-		1.7E+00
PCBs		7.1E+00	5.3E+02	4.7E+01	6.8E+03	7.1E+00			7.1E+00
Aroclor-1016	2.4E+01					2.4E+01			2.4E+01
Aroclor-1221	8.3E-01					8.3E-01		-	8.3E-01
Aroclor-1232	8.3E-01			-		8.3E-01			8.3E-01
Aroclor-1242	8.3E-01					8.3E-01			8.3E-01
Aroclor-1248	8.3E-01					8.3E-01			8.3E-01
Aroclor-1254	8.3E-01					8.3E-01			8.3E-01
Aroclor-1260	8.3E-01					8.3E-01			8.3E-01
VOCs									
1.1.1.2-Tetrachloroethane	7.6E+00	7.3E+01 ⁽¹¹⁾	1.6E+02 ⁽¹¹⁾	7.8E+01 ⁽¹¹⁾	4.9E+02 ⁽¹¹⁾	7.6E+00			7.6E+00
1,1,1-Trichloroethane	1.4E+03	5.4E+04 ⁽¹¹⁾	8.1E+01	5.5E+04 ⁽¹¹⁾	2.9E+04 ⁽¹¹⁾	8.1E+01			8.1E+01
1.1.2.2-Tetrachloroethane	9.7E-01	7.3E+00	2.6E+00	7.7E+00	2.4E+01	9.7E-01			9.7E-01
1.1.2-Trichloroethane	2.1E+00	1.9E+01	1.0E+00	1.9E+01	3.5E+01	1.0E+00			1.0E+00
1.1-Dichloroethane	2,3E+03	4.3E+03 ⁽¹¹⁾	2.8E+03 ⁽¹¹⁾	4.4E+03	2.5E+03	2.3E+03			2.3E+03
1.1-Dichloroethene	4.7E+02	3.5E+03 ⁽¹¹⁾	2.5E+00	3.8E+03 ⁽¹¹⁾	1.1E+03 ⁽¹¹⁾	2.5E+00			2.5E+00
1,1-Dichloropropene		6.1E+01	1.5E+01	7.7E+01	3.1E+01	1.5E+01			1.5E+01
1,2,3-Trichloropropane	3.4E-03	4.1E+00	2.6E-01	2.0E+03	1.0E+04	3.4E-03			3.4E-03
1.2.4-Trichlorobenzene	2.6E+02	4.2E+03 ⁽¹¹⁾	2.4E+02	1.1E+04 ⁽¹¹⁾	9.7E+04 ⁽¹¹⁾	2,4E+02	,		2.4E+02
1,2,4-Trimethylbenzene	1.9E+02	1.1E+02 ⁽¹¹⁾	7.2E+03	1.1E+02 ⁽¹¹⁾	6.8E+02 ⁽¹¹⁾	1.1E+02			1.1E+02
1.2-Dibromo-3-chloropropane	2.2E+00	5.6E+00 ⁽¹¹⁾	8.7E-02	5.8E+00	2.5E+01	8.7E-02			8.7E-02
1.2-Dibromoethane	7.0E-02	7.9E-01 ⁽¹¹⁾	1.0E-02	8.4E-01 ⁽¹¹⁾	2.5E+00 ⁽¹¹⁾	1.0E-02			1.0E-02
1.2-Dichlorobenzene	3.7E+02	5.7E+02	8.9E+02	5.7E+02	3.1E+03	3.7E+02			3.7E+02
1,2-Dichloroethane	8.4E-01	1.1E+01	6.9E-01	1.2E+01	9.8E+00	6.9E-01			6.9E-01
1,2-Dichloropropane	8.5E-01	4.4E+01	1.1E+00	4.4E+01	4.8E+01	8.5E-01			8.5E-01
1,3,5-Trimethylbenzene	7.8E+01	8.3E+01	7.9E+03	8.3E+01	5.0E+02	7.8E+01			7.8E+01
1.3-Dichlorobenzene	1.5E+02	8.8E+01	1.0E+03	8.8E+01	1.6E+02	8.8E+01			8.8E+01
1,3-Dichloropropane		6.1E+01	7.2E+00	7.7E+01	2.0E+02	7.2E+00			7.2E+00
1.4-Dichlorobenzene	8.1E+00	1.2E+03	1.1E+02	1.3E+04	6.6E+04	8.1E+00			8.1E+00

TABLE 8 - EXTENT EVALUATION COMPARISON VALUES - EASTERN AND VERTICAL EXTENT IN SOIL⁽¹⁾

	Potential Prelin	ninary Screenir	g Values (PSV: Plan ⁽²⁾	s) from Table 1:	5 of RI/FS Work		Potential Bac	kground Values	Extent Evaluation Comparison Value
Chemicals of Interest	EPA Region 6 Soil Screening Criteria ⁽³⁾	TotSoil _{Comb} ⁽⁴⁾	GWSoil _{Class 3} (5)	AirSoil _{Inh-V} ⁽⁶⁾	AirGW Soil Inh-V (7)	PSV	TCEQ ⁽⁹⁾	Site-Specific ⁽¹⁰⁾	
2,2-Dichloropropane		4.4E+01	1.4E+01	4.4E+01	4.6E+01	1.4E+01			1.4E+01
2-Butanone	3.4E+04	7.3E+04	4.4E+03	8.2E+04	4.9E+05	4.4E+03			4.4E+03
2-Chloroethylvinyl ether		3.3E+00	3.2E-01	3.3E+00	6.2E+00	3.2E-01			3.2E-01
2-Chlorotoluene	5.1E+02	2.5E+03	1.4E+03	3.1E+03	1.3E+04	5.1E+02			5.1E+02
2-Hexanone		7.9E+01	5.8E+02	7.9E+01	3.7E+02	7.9E+01			7.9E+01
4-Chlorotoluene		3.5E+00	5.7E+03 ⁽¹¹⁾	3.5E+00	1.6E+01	3.5E+00			3.5E+00
4-Isopropyltoluene		4.7E+03	3.5E+04	4.9E+03	3.9E+04	4.7E+03			4.7E+03
4-Isopropyltoluene 4-Methyl-2-pentanone	1.7E+04	2.8E+04	7.4E+02	4.2E+04	1.5E+05	7.4E+02			7.4E+02
Acetone	1.0E+05	8.1E+03	6.4E+03	8.2E+03	4.5E+04	6.4E+03			6.4E+03
Acrolein	3.8E-01	8.1E-01	3.5E+00	8.1E-01	1.2E+01	3.8E-01			3.8E-01
Acrylonitrile	5.5E-01	4.2E+00	3.7E-01	4.6E+00	1.2E+01	3.7E-01			3.7E-01
	1.6E+00	1.11E+02 ⁽¹¹⁾	1.3E+00	1.41E+02 ⁽¹¹⁾	1.00E+02 ⁽¹¹⁾	1.3E+00			1.3E+00
Benzene				1.41E+02 ⁽¹¹⁾	4.0E+02 ⁽¹¹⁾	1.2E+02			1.2E+02
Bromobenzene	1.2E+02	1.2E+02 ⁽¹¹⁾	8.6E+02	1.2E+02* /	4.0E+02*	2.6E+00			2.6E+00
Bromodichloromethane	2.6E+00	4.6E+02	7.3E+00	7.25.02	3.1E+03	7.1E+01			7.1E+01
Bromoform	2.4E+02	6.0E+02	7.1E+01	7.2E+02 5.5E+01	1.6E+01	1.5E+01			1.5E+01
Bromomethane	1.5E+01	5.3E+01	2.0E+01	3.3E+01 3.2E+03	3.8E+04	7.9E+02			7.9E+02
Butanol	6.8E+04	3.1E+03	7.9E+02	7.7E+03	2.4E+03	7.2E+02			7.2E+02
Carbon disulfide	7.2E+02	7.2E+03	2.0E+03	2.1E+01	1.1E+01	5.8E-01			5.8E-01
Carbon tetrachloride	5.8E-01	1.9E+01	3.1E+00						5.5E+01
Chlorobenzene	6.0E+02	5.4E+02 ⁽¹¹⁾	5.5E+01	5.5E+02 ⁽¹¹⁾	1.1E+03 ⁽¹¹⁾	5.5E+01			7.2E+00
Chloroethane	7.2E+00	8.7E+04	4.6E+03	1.1E+05	3.3E+04	7.2E+00			7.2E+00 5.8E-01
Chloroform	5.8E-01	1.3E+01	1.5E+02	1.3E+01	9.0E+00	5.8E-01			3.0E+00
Chloromethane	3.0E+00	1.6E+02	4.5E+01	1.7E+02	2.3E+01	3.0E+00			
cis-1,2-Dichloroethene	1.6E+02	4.7E+03	1.2E+01	8.8E+03	5.2E+03	1.2E+01			1.2E+01 7.4E-01
cis-1,3-Dichloropropene		4.3E+01	7.4E-01	7.4E+01	8.2E+01	7.4E-01		<u> </u>	2.6E+00
Dibromochloromethane	2.6E+00	3.4E+02	5.5E+00			2.6E+00			1.3E+02
Dibromomethane	5.9E+02	1.9E+02	1.3E+02	1.9E+02	6.6E+02	1,3E+02			3.4E+02
Dichlorodifluoromethane	3.4E+02	4.3E+04	3.6E+04	5.5E+04	1.3E+04 1.5E+04	3.4E+02 2.3E+02			2.3E+02
Ethylbenzene	2.3E+02	1.0E+04	3.8E+02	1.1E+04					
Hexachlorobutadiene	2.5E+01	2.3E+01	3.7E+02 ⁽¹¹⁾	2.5E+01	2.7E+02	2.3E+01			2.3E+01 5.8E+02
Isopropylbenzene (Cumene)	5.8E+02	6.3E+03	5.2E+04	6.7E+03	5.7E+04	5.8E+02			
Methyl acetate	1.0E+05	6.6E+03	7.3E+03	6.6E+03	2.4E+04	6.6E+03			6.6E+03 1.7E+01
Methyl iodide		1.2E+02	1.7E+01	1.3E+02	5.1E+01	1.7E+01			1.4E+02
Methylcyclohexane	1.4E+02	3.3E+04	1.0E+06	3.3E+04	1.6E+04	1.4E+02			6.5E-01
Methylene chloride	2.2E+01	5.6E+02	6.5E-01	6.6E+02	3.6E+02	6.5E-01			1.9E+02
Naphthalene	2.1E+02	1.9E+02	4.7E+03	1.9E+02	1.8E+03	1.9E+02			2.4E+02
n-Butylbenzene	2.4E+02	4.0E+03	1.8E+04	4.7E+03	4.1E+04	2.4E+02			2.4E+02 2.4E+02
n-Propylbenzene	2.4E+02	4.1E+03	6.7E+03	4.6E+03	2.5E+04	2.4E+02			
o-Xylene	2.8E+02	8.0E+03 ⁽¹¹⁾	3.5E+03	8.1E+03 ⁽¹¹⁾	8.0E+04 ⁽¹¹⁾	2.8E+02			2.8E+02

TABLE 8 - EXTENT EVALUATION COMPARISON VALUES - EASTERN AND VERTICAL EXTENT IN SOIL⁽¹⁾

	Potential Prelin	ninary Screenin	ig Values (PSV: Plan ⁽²⁾	s) from Table 15	5 of RI/FS Work		Potential Bacl	kground Values	
Chemicals of Interest	EPA Region 6 Soil Screening Criteria ⁽³⁾	TotSoil _{Comb} (4)	^{GW} Soil _{Class} 3 ⁽⁵⁾	AirSoil _{Inb-V} ⁽⁶⁾	AirGWSoil _{Inh-V} (7)	PSV	TCEQ ⁽⁹⁾	Site-Specific ⁽¹⁰⁾	Extent Evaluation Comparison Value
sec-Butylbenzene	2.2E+02	3.7E+03	1.3E+04	4.1E+03	3.0E+04	2.2E+02		_	2.2E+02
Styrene	1.7E+03	1.6E+04	1.6E+02	1.7E+04	9.5E+04	1.6E+02			1.6E+02
tert-Butyl methyl ether (MTBE)	4.1E+01	1.1E+03	9.3E+01	1.2E+03	1.1E+03	4.1E+01			4.1E+01
tert-Butylbenzene	3.9E+02	3.2E+03	1.5E+04	3.4E+03	2.3E+04	3.9E+02			3.9E+02
Tetrachloroethene	1.7E+00	2.7E+02	2.5E+00	5.3E+02	3.6E+02	1.7E+00			1.7E+00
Toluene	5.2E+02	3.3E+04 ⁽¹¹⁾	4.1E+02	5.5E+04 ⁽¹¹⁾	5.8E+04 ⁽¹¹⁾	4.1E+02			4.1E+02
	2.4E+02	6.42E+02 ⁽¹¹⁾	2.5E+01	6.63E+02 ⁽¹¹⁾	3.41E+02 ⁽¹¹⁾	2.5E+01			2.5E+01
trans-1,2-Dichloroethene	2.46+02	6.1E+01	4.0E+00	7.7E+01	8.1E+01	4.0E+00			4.0E+00
trans-1,3-Dichloropropene		2.9E-01	4.05100	2.9E-01	1.2E+00	2.9E-01			2.9E-01
trans-1,4-Dichloro-2-butene	1.0E-01	1.7E+02	1.7E+00	1.8E+02	1.2E+02	1.0E-01			1.0E-01
Trichloroethene	1.4E+03	2.8E+04	1.7E+00 1.9E+04	3.1E+04	6.4E+03	1.4E+03			1.4E+03
Trichlorofluoromethane	5.6E+03	3.3E+05	1.0E+06	3.3E+05	9.0E+04	5.6E+03			5.6E+03
Trichlorotrifluoroethane	1.6E+03	2.2E+03	8.0E+03	2.2E+03	2.8E+03	1.6E+03			1.6E+03
Vinyl acetate	4.3E-01	1.2E+01	1.1E+00	3.5E+01	4.4E+00	4.3E-01			4.3E-01
Vinyl chloride	2.1E+02	1.1E+03	6.1E+00	1.1E+03	1.9E+03	2.1E+02			2.1E+02
Xylene (total) SVOCs	Z.1E+02	1.15.03	0.12.03	1.12.03	1.55.03	2.12.02	L		
	2.4E+00	1.5E+02 ⁽¹¹⁾	2.0E+03 ⁽¹¹⁾	1.2E+03 ⁽¹¹⁾	1.6E+05 ⁽¹¹⁾	2.4E+00		Τ	2.4E+00
1,2Diphenylhydrazine/Azobenzen	6.8E+04	1.3E+02	5.1E+03	1.5E+03	5.7E+05	5.1E+03			5.1E+03
2,4,5-Trichlorophenol									
2,4,6-Trichlorophenol	1.7E+02	6.81E+02 ⁽¹¹⁾	2.61E+01 ⁽¹¹⁾	1.7E+03	3.8E+04	2.6E+01		-	2.6E+01 5.3E+01
2,4-Dichlorophenol	2.1E+03	1.7E+03	5.3E+01	9.6E+03	2.4E+05	5.3E+01			3.3E+01 4.8E+02
2,4-Dimethylphenol	1.4E+04	2.9E+03	4.8E+02	3.6E+03	9.8E+04	4.8E+02			· · · · · · · · · · · · · · · · · · ·
2,4-Dinitrophenol	1.4E+03	1.4E+03	1.4E+01			1.4E+01			1.4E+01
2,4-Dinitrotoluene	1.4E+03	2.1E+01	6.0E-01	2.1E+01	4.4E+02	6.0E-01			6.0E-01
2,6-Dinitrotoluene	6.8E+02	2.8E+01	5.4E-01	3.1E+01	1.0E+03	5.4E-01			5.4E-01
2-Chloronaphthalene	2.6E+04	5.0E+04	1.0E+05			2.6E+04			2.6E+04
2-Chlorophenol	2.6E+02	2.4E+03	2.4E+02	4.5E+03	7.4E+04	2.4E+02			2.4E+02
2-Methylnaphthalene		2.5E+03	2.5E+03			2.5E+03			2.5E+03
2-Nitroaniline	2.0E+03	2.9E+01 ⁽¹¹⁾	3.3E+00 ⁽¹¹⁾	3.4E+01 ⁽¹¹⁾	1.1E+03 ⁽¹¹⁾	3.3E+00			3.3E+00
2-Nitrophenol		4.1E+02	2.0E+01	5.8E+02	1.7E+04	2.0E+01			2.0E+01
3,3'-Dichlorobenzidine	4.3E+00	4.2E+01	7.0E+00			4.3E+00			4.3E+00
3-Nitroaniline		1.6E+02	3.8E+00	6.4E+02	2.3E+04	3.8E+00			3.8E+00
4,6-Dinitro-2-methylphenol		2.26E+01 ⁽¹¹⁾	7.0E-01 ⁽¹¹⁾	3.4E+01	1.5E+03	7.0E-01			7.0E-01
4-Bromophenyl phenyl ether		1.1E+00	4.0E+01	8.4E+00	1.0E+03	1.1E+00			1.1E+00
4-Chloro-3-methylphenol		3.0E+03	6.8E+02	2.5E+04	1.0E+06	6.8E+02			6.8E+02
4-Chloroaniline	2.7E+03	7.5E+02	6.7E+01	1.0E+03	2.8E+04	6.7E+01			6.7E+01
4-Chlorophenyl phenyl ether		8.0E-01	3.6E+00	2.2E+00	7.0E+01	8.0E-01			8.0E-01
4-Nitroaniline		3.6E+02 ⁽¹¹⁾	6.4E+00 ⁽¹¹⁾	4.3E+02 ⁽¹¹⁾	1.5E+04 ⁽¹¹⁾	6.4E+00			6.4E+00

TABLE 8 - EXTENT EVALUATION COMPARISON VALUES - EASTERN AND VERTICAL EXTENT IN SOIL⁽¹⁾

	Potential Prelin	ninary Screenii	ng Values (PSV: Plan ⁽²⁾	s) from Table 1	5 of RI/FS Work		Potential Ba	ekground Values	
Chemicals of Interest	EPA Region 6 Soil Screening Criteria ⁽³⁾	TotSoil _{Comb} (4)	GWSoil _{Class 3} (5)	Air Soil _{Inb-V} (6)	AirGWSoil _{Inh-V} (7)	PSV	TCEQ ⁽⁹⁾	Site-Specific ⁽¹⁰⁾	Extent Evaluation Comparison Value
1-Nitrophenol	5.5E+03	1.1E+02	1.5E+01	1.2E+02	4.4E+03	1.5E+01			1.5E+01
Acenaphthene	3.3E+04	3.7E+04	3.5E+04			3.3E+04			3.3E+04
Acenaphthylene		3.7E+04	6.1E+04			3.7E+04			3.7E+04
Acetophenone	1.7E+03	3.3E+03	1.2E+03	3.5E+03	4.1E+04	1.2E+03			1.2E+03
Aniline	3.4E+02	9.3E+01	4.1E+01	9.4E+01	2.3E+03	4.1E+01			4.1E+01
Anthracene	1.0E+05	1.9E+05	1.0E+06		_	1.0E+05			1.0E+05
Atrazine (Aatrex)	8.6E+00	8.6E+01	1.2E+00	2.4E+03	1.4E+05	1.2E+00			1.2E+00
Benzaldehyde	6.8E+04	3.4E+02	1.6E+03	3.5E+02	2.0E+03	3.4E+02			3.4E+02
Benzidine	8.3E-03	3.3E-02	1.2E-03	5.4E-02	1.9E+00	1.2E-03			1.2E-03
Benzo(a)anthracene	2.3E+00	2.4E+01	2.0E+03	3.2E+03	1.0E+06	2.3E+00			2.3E+00
Benzo(a)pyrene	2.3E-01	2.4E+00	3.8E+02	7.3E+02	1.0E+06	2.3E-01			2.3E-01
Benzo(b)fluoranthene	2.3E+00	2.4E+01	6.7E+03	5.3E+03	1.0E+06	2.3E+00			2.3E+00
Benzo(g,h,i)perylene		1.9E+04	1.0E+06			1.9E+04	_		1.9E+04
Benzo(k)fluoranthene	2,3E+01	2.4E+02	6.9E+04	1.3E+05	1.0E+06	2.3E+01			2.3E+01
Benzoic acid	1.0E+05	5.0E+02	2.8E+04	5.0E+02	1.8E+04	5.0E+02			5.0E+02
Benzyl alcohol	1.0E+05	6.2E+03	4,4E+03 ⁽¹¹⁾	6.4E+03	2.0E+05	4.4E+03			4.4E+03
Biphenyl	2.6E+04	1.9E+02	3.8E+04	1.9E+02	3.8E+03	1.9E+02			1.9E+02
Bis(2-Chloroethoxy)methane		6.2E+00	1.3E+00	9.8E+00	1.2E+02	1.3E+00			1.3E+00
Bis(2-Chloroethyl)ether	6.2E-01	2.8E+00	2.4E-01	3.1E+00	2.6E+01	2.4E-01			2.4E-01
Bis(2-Chloroisopropyl)ether		1.1E+02	2.1E+01	1.8E+02	1.4E+03	2.1E+01			2.1E+01
Bis(2-Ethylhexyl)phthalate	1.4E+02	5.6E+02	8.2E+03			1.4E+02			1.4E+02
Butyl benzyl phthalate	2.4E+02	1.6E+04	4.0E+05	1.8E+04	1.0E+06	2.4E+02			2.4E+02
Caprolactam	1.0E+05	2.3E+02	7.0E+03	2.3E+02	8.5E+03	2.3E+02			2.3E+02
Carbazole	9.6E+01	9.5E+02	5.1E+02			9.6E+01			9.6E+01
Chrysene	2.3E+02	2.4E+03	1.7E+05	5.1E+05	1.0E+06	2.3E+02			2.3E+02
Dibenz(a h)anthracene	2.3E-01	2.4E+00	1.1E+03	1.7E+03	1.0E+06	2.3E-01			2.3E-01
Dibenzofuran	1.7E+03	2.7E+03	5.0E+03	- 1.72.03		1.7E+03			1.7E+03
Diethyl phthalate	1.0E+05	2.0E+03	2.3E+04	2.1E+03	9.8E+04	2.0E+03			2.0E+03
Dimethyl phthalate	1.0E+05	9.3E+02	9.3E+03	9,3E+02	3.0E+04	9.3E+02			9.3E+02
Di-n-butyl phthalate	6.8E+04	1.6E+04	5.0E+05	2.1E+04	1.0E+06	1.6E+04			1.6E+04
Di-n-octyl phthalate	2.7E+04	1,3E+04 ⁽¹¹⁾	1.0E+06	3.9E+05 ⁽¹¹⁾	1.0E+06 ⁽¹¹⁾	1.3E+04			1.3E+04
Fluoranthene	2.4E+04	2.5E+04	2.9E+05	3.96703	1.0E+00	2.4E+04			2.4E+04
Fluorantnene Fluorene	2.4E+04 2.6E+04	2.5E+04 2.5E+04	4.5E+04			2.4E+04 2.5E+04			2.4E+04 2.5E+04
Hexachlorobenzene	1.2E+00	6.9E+00	5.6E+01	1.6E+01	7.0E+02	1.2E+00			1.2E+00
	4.1E+03	1.0E+01	9.6E+02	1.0E+01	1.9E+02	1.0E+01			1.0E+01
Hexachlorocyclopentadiene	1.4E+03	5.2E+02	9.6E+02 2.7E+02	8.3E+02	1.9E+02 1.2E+04	1.4E+02			1.4E+02
Hexachloroethane	2.3E+00	2.4E+01	1.9E+04	2.2E+04	1.2E+04 1.0E+06	2.3E+00			2.3E+00
Indeno(1,2,3-cd)pyrene				1.9E+03	2.9E+04	3.4E+02		<u> </u>	3.4E+02
Isophorone	2.0E+03	1.9E+03	3.4E+02	1.70+03	2.7ETU4	3.4ETUZ			1.3E+01

TABLE 8 - EXTENT EVALUATION COMPARISON VALUES - EASTERN AND VERTICAL EXTENT IN SOIL (1)

	Potential Prelin	ninary Screenir	ng Values (PSVs Plan ⁽²⁾	s) from Table 1	5 of RI/FS Work		Potential Background Values		'
Chemicals of Interest	EPA Region 6 Soil Screening Criteria ⁽³⁾	TotSoil _{Comb} (4)	GWSoil _{Class 3} (5)	Air Soil _{Inb-V} (6)	Air GW Soil Inh. V (7)	PSV	TCEQ ⁽⁹⁾	Site-Specific ⁽¹⁰⁾	Extent Evaluation Comparison Value
n-Nitrosodimethylamine	3.8E-02	1.3E-01	4.1E-03	1.7E-01	4.5E+00	4.1E-03			4.1E-03
n-Nitrosodi-n-propylamine	2.7E-01	1.4E+00	3.9E-02			3.9E-02			3.9E-02
n-Nitrosodiphenylamine	3.9E+02	1.9E+03	3.2E+02			3.2E+02			3.2E+02
o-Cresol	3.4E+04	1.9E+03	1.1E+03	2.0E+03	5.3E+04	1.1E+03			1.1E+03
Pentachlorophenol	1.0E+01	1.1E+02	9.2E-01	3.3E+02	2.2E+04	9.2E-01			9.2E-01
Phenanthrene		1.9E+04	6.2E+04			1.9E+04			1.9E+04
Phenol	1.0E+05	2.4E+03	2.9E+03	2.4E+03	6.5E+04	2.4E+03			2.4E+03
Pyrene	3.2E+04	1.9E+04	1.7E+05			1.9E+04	-		1.9E+04
Pyridine	6.8E+02	1.4E+02	1.0E+01	1.7E+02	5.7E+01	1.0E+01			1.0E+01
	I								
Sulfate		T				NV			NV
Chloride						NV			NV

- 1. All values in mg/kg.
- 2. Values from Table 15 of RI/FS Work Plan (updated to reflect changes in toxicity data since 2005 where applicable).
- 3. From EPA's "Region 6 Human Health Medium-Specific Screening Levels 2004-2005". Industrial Outdoor Worker.
- 4. TotSoilcomb PCL = TCEQ Protective Concentration Level for 30 acre source area Commercial/Industrial total soil combined pathway (includes inhalation; ingestion; dermal pathways).
- 5. GWSoilClass3 PCL = TCEQ Protective Concentration Level for 30 acre source area Commercial/Industrial soil-to-groundwater leaching for Class 3 groundwater pathway.
- 6. Air Soil tabey PCL = TCEQ Protective Concentration Level for 30 acre source area Commercial/Industrial soil-to-air pathway (inhalation of volatiles and particulates).
- 7. Air GW-Soil int-y PCL = TCEQ Protective Concentration Level for 30 acre source area Commercial/Industrial soil and groundwater-to-air pathway (inhalation of volatiles and particulates).
- 8. NV = No Preliminary Screening Value.
- 9. From 30 TAC 350.51(m)
- 10. 95% UTL calculated from site-specific background samples.
- 11. Updated from Table 15 of RI/FS Workplan to reflect changes in toxicity data from 2005 to 2008 indicated in TCEQ PCL tables.

TABLE 9 - DETECTED SOIL CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES - VERTICAL EXTENT OF SOUTH AREA

Sample Location	Sample Depth (ft)	Chemical of Interest	Concentration (mg/kg)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/kg)
		Benzo(a)anthracene	4.21J	2.3
		Benzo(a)pyrene	4.88J	0.23
CA10D15	1-2	Benzo(b)fluoranthene	5.34J	2.3
SA1SB15	1-2	Dibenz(a,h)anthracene	0.817	0.23
		Indeno(1,2,3-cd)pyrene	4.37J	2.3
		Lead	395	151
		Aroclor-1254	3.42	0.83
		Benzo(a)pyrene	2.13J	0.23
SA2SB16	1-2	Benzo(b)fluoranthene	2.76J	2.3
		Dibenz(a,h)anthracene	0.322	0.23
		Lead	702	151
		Aroclor-1254	11.5	0.83
G 4 2 GD 1 G	1.0	Benzo(a)pyrene	0.608J	0.23
SA3SB17	1-2	Lead	252	151
		Mercury	0.85	0.391
gpagpaa	1.0	Aroclor-1254	2.84	0.83
SB2SB22	1-2	Benzo(a)pyrene	0.38J	0.23
		Aroclor-1254	2.73	0.83
SB4SB24	1-2	Benzo(a)pyrene	1.37J	0.23
		Dibenz(a,h)anthracene	0.324	0.23
SC3SB27	1-2	Dibenz(a,h)anthracene	0.606	0.23
CC4CD20	1.2	Benzo(a)pyrene	1.2J	0.23
SC4SB28	1-2	Lead	192J	151
SD3SB33	1-2	Benzo(a)pyrene	0.509J	0.23
		Aroclor-1254	1.41	0.83
		Benzo(a)anthracene	4.79	2.3
		Benzo(a)pyrene	4.45J	0.23
SD5SB35	1-2	Benzo(b)fluoranthene	5.97	2.3
		Dibenz(a,h)anthracene	1.23	0.23
		Indeno(1,2,3-cd)pyrene	2.79Ј	2.3
		Mercury	0.5	0.391
SF2SB44	1-2	Dibenz(a,h)anthracene	0.354J	0.23
0E20D45	1.2	Arsenic	9.58	8.66
SF3SB45	1-2	Benzo(a)pyrene	0.966J	0.23
SF4SB46	1-2	Benzo(a)pyrene	0.921J	0.23
SG4SB56	1-2	Benzo(a)pyrene	0.248J	0.23
SG6SB59	1-2	Benzo(a)pyrene	0.276J	0.23
SI1SB69	1-2	Arsenic	9.38	8.66

⁽¹⁾ Extent Evaluation Comparison Values from Table 8.

⁽²⁾ Data qualifiers: J = estimated value.

TABLE 10 - SOUTH AREA PHASE 2 DEEP SOIL SAMPLE DATA

Sample Location	Sample Depth (ft)	Chemical of Interest	Concentration (mg/kg)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/kg)
		Benzo(a)anthracene	<0.00504	2.3
		Benzo(a)pyrene	0.0269 J	0.23
SA1SB15	4-5	Benzo(b)fluoranthene	0.0281 J	2.3
SAISBIS	4-3	Dibenz(a,h)anthracene	<0.00655	0.23
		Indeno(1,2,3-cd)pyrene	0.0236 J	2.3
		Lead	12.1	151
		Aroclor-1254	<0.00579	0.83
		Benzo(a)pyrene	<0.00866	0.23
SA2SB16	4-5	Benzo(b)fluoranthene	<0.0118	2.3
		Dibenz(a,h)anthracene	<0.00661	0.23
		Lead	7.88	151
		Aroclor-1254	<0.00614	0.83
SA3SB17	4-5	Benzo(a)pyrene	<0.00928	0.23
SASSD17	4-3	Lead	11.7	151
		Mercury	<0.024	0.391
SB2SB22	4-5	Aroclor-1254	0.0769	0.83
3023022	4-3	Benzo(a)pyrene	<0.00986	0.23
		Aroclor-1254	0.0203 J	0.83
SB4SB24	4-5	Benzo(a)pyrene	0.0311 J	0.23
		Dibenz(a,h)anthracene	<0.00734	0.23
SC3SB27	4-5	Dibenz(a,h)anthracene	<0.0068	0.23
SC4SB28	4-5	Benzo(a)pyrene	<0.00899	0.23
SC4SB26	4-3	Lead	11.3	151
SD3SB33	4-5	Benzo(a)pyrene	<0.00924	0.23
		Aroclor-1254	<0.00648	0.83
		Benzo(a)anthracene	<0.00567	2.3
		Benzo(a)pyrene	<0.00966	0.23
SD5SB35	4-5	Benzo(b)fluoranthene	<0.0132	2.3
		Dibenz(a,h)anthracene	<0.00737	0.23
		Indeno(1,2,3-cd)pyrene	<0.0141	2.3
		Mercury	<0.028	0.391
SF2SB44	4-5	Dibenz(a,h)anthracene	<0.00752	0.23
SF3SB45	4-5	Arsenic	0.25 J	8.66
		Benzo(a)pyrene	<0.00935	0.23
SF4SB46	4-5	Benzo(a)pyrene	<0.00949	0.23
SG4SB56	4-5	Benzo(a)pyrene	< 0.00965	0.23
SG6SB59	4-5	Benzo(a)pyrene	<0.00906	0.23
SI1SB69	4-5	Arsenic	<0.13	8.66

⁽¹⁾ Extent Evaluation Comparison Values from Table 8.

⁽²⁾ Data qualifiers: J =estimated value.

TABLE 11 - LOT 19 / 20 SOIL SAMPLE LEAD CONCENTRATIONS

Sample	
\mathbf{m}	Lead Concentration (mg/kg)
L19SS01	17.3
L19SS02	18.8
L19SS03	11.2
L19SS04	8.87
L19SS05	12.0
L19SS06	19.3
L19SS07	12.8
L19SS08	12.8
L19SS09	55.3
L19SS10	17.1
L19SS11	12.1
L19SS12	13.5
L19SS13	16.7
L19SS14	16.0
L19SS15	23.2
L19SS16	18.8
L19SS17	175
L20SS01	10.8
L20SS02	222
L20SS03	23.1
L20SS04	462
L20SS05	8.61
L20SS06	23.8
L20SS07	129
L20SS08	73.6
L20SS09	84.3
L20SS10	253

Notes:

1. Data Qualifiers: none.

TABLE 12 - FORMER SURFACE IMPOUNDMENTS CAP MATERIAL DATA

Boring Location	Cap Material Description ⁽¹⁾	Observed Cap Thickness (ft)	Liquid Limit ⁽²⁾ (%)	Plastic Limit ⁽²⁾ (%)	Plasticity Index ⁽²⁾ (%)	Percent Passing # 200 Sieve ⁽³⁾ (%)	Moisture Content ⁽⁴⁾ (%)	Vertical Hydraulic Conductivity ⁽⁵⁾ (cm/sec)
ND1GT01	Sandy Lean Clay	2.9	48	16	32	70	20	3.5 x 10 ⁻⁸
ND2GT02	Lean Clay with Sand	>3.5	49	14	35	84	23	1.4 x 10 ⁻⁸
NE1GT03	Lean Clay with Sand	2.5	49	13	35	74	19	5.0 x 10 ⁻⁹
NE2GT04	Fat Clay	3.6	58	15	43	88	26	5.9 x 10 ⁻⁹
							<u> </u>	·
TCEQ Technical			10 - 35	>20		<1.0 x 10 ⁻⁷		

- 1. Crushed oyster shell surface observed above clay cap at all four boring locations.
- 2. ASTM Method D 4318
- 3. ASTM Method D 1140
- 4. ASTM Method D 2216
- 5. US Army Corps of Engineers, Engineering Manual Method 1110-2-1906

TABLE 13 - DETECTED SOIL CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES - NORTH AREA

Sample Location	Sample Depth (ft below ground surface)	Chemical of Interest	Concentration (mg/kg)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/kg)
	1-2	1,2,3-Trichloropropane	0.168	0.0014
ND2CD04	1-2	Trichloroethene	0.537	0.043
ND3SB04	4-5	1,2,3-Trichloropropane	0.0472	0.0014
	4-3	Trichloroethene	0.29Ј	0.043
NE2GD00	0-0.5	Benzo(a)pyrene	1.42J	0.062
NE3SB09	0-0.5	Dibenz(a,h)anthracene	0.404J-	0.062
SB-202	0-0.5	Iron	102,000	53,000
SD-202	0-0.5	Lead	471	18
SB-203	1.5-2	Benzo(a)pyrene	0.939	0.062
SB-204	1.5-2	Aroclor-1254	6.35J	0.22
SB-205	3-4	Iron	128,000	53,000
315-203	J -4	Lead	630	18
SB-206	5-6	Arsenic	8.95	8.7

- (1) Extent Evaluation Comparison Values from Table 6.
- (2) Data qualifiers: J =estimated value. J -estimated value, biased low.

TABLE 14 - WETLAND AND POND SEDIMENT EXTENT EVALUATION COMPARISON VALUES(1)

	Potential Prelimin	ary Screening Values (F RI/FS Work Plan ⁽²⁾	SVs) from Table 21 of			Extent Evaluation Comparison Value
Chemicals of Interest	TotSed _{Comb} (3)	TCEQ Ecological Benchmark for Sediment ⁽⁴⁾	EPA EcoTox Threshold (5)	PSV	Potential Site- Specific Background Values ⁽⁶⁾	
METALS						
Aluminum	1.5E+05			1.5E+05		1.5E+05
Antimony	8.3E+01			8.3E+01		8.3E+01
Arsenic	1.1E+02	8.2E+00	8.2E+00	8.2E+00	8.7E+00	8.7E+00
Barium	2.3E+04			2.3E+04	4.6E+02	2.3E+04
Beryllium	2.7E+01			2.7E+01		2.7E+01
Boron	1.1E+05			1.1E+05		1.1E+05
Cadmium	1.1E+03	1.2E+00	1.2E+00	1.2E+00		1.2E+00
Chromium	3.6E+04	8.1E+01	8.1E+01	8.1E+01	2.4E+01	8.1E+01
Chromium (VI)	1.4E+02			1.4E+02		1.4E+02
Cobalt	3.2E+04			3.2E+04		3.2E+04
Copper	2.1E+04	3.4E+01	3.4E+01	3.4E+01	2.4E+01	3.4E+01
Iron				NV		NV
Lead	5.0E+02	4.7E+01	4.7E+01	4.7E+01	1.8E+01	4.7E+01
Lithium	1.1E+04			1.1E+04	3.6E+01	1.1E+04
Manganese	1.4E+04			1.4E+04	6.5E+02	1.4E+04
Mercury	3.4E+01	1.5E-01	1.5E-01	1.5E-01	3.5E-02	1.5E-01
Molybdenum	1.8E+03			1.8E+03	7.4E-01	1.8E+03
Nickel	1.4E+03	2.1E+01	2.1E+01	2.1E+01		2.1E+01
Selenium	2.7E+03			2.7E+03		2.7E+03
Silver	3.5E+02	1.0E+00	1.0E+00	1.0E+00		1.0E+00
Strontium	1.5E+05			1.5E+05		1.5E+05
Thallium	4.3E+01			4.3E+01		4.3E+01
Tin	9.2E+04			9.2E+04		9.2E+04
Titanium	1.0E+06			1.0E+06		1.0E+06
Vanadium	3.3E+02			3.3E+02		3.3E+02
Zinc	7.6E+04	1.5E+02	1.5E+02	1.5E+02	2.8E+02	2.8E+02
PESTICIDES						
4,4'-DDD	1.2E+02	1.2E-03	1.2E-03	1.2E-03		1.2E-03
4,4'-DDE	8.7E+01	2.1E-03	2.1E-03	2.1E-03		2.1E-03
4,4'-DDT	8.7E+01	1.2E-03	1.2E-03	1.2E-03		1.2E-03

TABLE 14 - WETLAND AND POND SEDIMENT EXTENT EVALUATION COMPARISON VALUES⁽¹⁾

	Potential Prelimin	ary Screening Values (F RI/FS Work Plan ⁽²⁾				
Chemicals of Interest	TotSed _{Comb} (3)	TCEQ Ecological Benchmark for Sediment ⁽⁴⁾	Benchmark for EPA EcoTox Threshold (5)		Potential Site- Specific Background Values ⁽⁶⁾	Extent Evaluation Comparison Value
Aldrin	8.4E-01			8.4E-01		8.4E-01
alpha-BHC	4.1E+00			4.1E+00		4.1E+00
alpha-Chlordane	4.1E+01	2.3 - 03 ⁽⁷⁾		2.3E-03		2.3E-03
beta-BHC	1.4E+01			1.4E+01		1.4E+01
delta-BHC	1.4E+01			1.4E+01		1.4E+01
Dieldrin	8.9E-01	7.2E-04	7.2E-04	7.2E-04		7.2E-04
Endosulfan I	3.1E+02		2.9E-03	2.9E-03		2.9E-03
Endosulfan II	9.2E+02		1.4E-02	1.4E-02		1.4E-02
Endosulfan sulfate	9.2E+02			9.2E+02		9.2E+02
Endrin	4.6E+01		3.5E-03	3.5E-03		3.5E-03
Endrin aldehyde	4.6E+01			4.6E+01		4.6E+01
Endrin ketone	4.6E+01			4.6E+01		4.6E+01
gamma-BHC (Lindane)	2.0E+01	3.2E-04	3.2E-04	3.2E-04		3.2E-04
gamma-Chlordane	4.1E+01	2.3-03 ⁽⁷⁾		2.3E-03		2.3E-03
Heptachlor	3.2E+00			3.2E+00		3.2E+00
Heptachlor epoxide	1.6E+00			1.6E+00		1.6E+00
Methoxychlor	7.7E+02		1.9E-02	1.9E-02		1.9E-02
Toxaphene	1.3E+01		2.8E-02	2.8E-02		2.8E-02
PCBs	2.3E+00	2.3E-02		2.3E-02		2.3E-02
Aroclor-1016				0.0E+00		0.0E+00
Aroclor-1221				0.0E+00		0.0E+00
Aroclor-1232				0.0E+00		0.0E+00
Aroclor-1242				0.0E+00		0.0E+00
Aroclor-1248				0.0E+00		0.0E+00
Aroclor-1254				0.0E+00		0.0E+00
Aroclor-1260				0.0E+00		0.0E+00
VOCs						
1,1,1,2-Tetrachloroethane	2.1E+03			2.1E+03		2.1E+03
1,1,1-Trichloroethane	1.5E+05	2.6E+00	1.7E-01	1.7E-01		1.7E-01
1,1,2,2-Tetrachloroethane	2.7E+02	6.1E-01	9.4E-01	6.1E-01		6.1E-01
1,1,2-Trichloroethane	9.6E+02	3.0E-01		3.0E-01		3.0E-01

TABLE 14 - WETLAND AND POND SEDIMENT EXTENT EVALUATION COMPARISON VALUES⁽¹⁾

	Potential Prelimina	ary Screening Values (F RI/FS Work Plan ⁽²⁾	- 1		Potential Site-	
Chemicals of Interest	Tot Sed _{Comb} (3)	TCEQ Ecological Benchmark for Sediment (4)		EcoTox Threshold (5) PSV		Extent Evaluation Comparison Value
1,1-Dichloroethane	7.3E+04			7.3E+04		7.3E+04
1,1-Dichloroethene	3.7E+04	1.5E+01		1.5E+01		1.5E+01
1,1-Dichloropropene	5.4E+02			5.4E+02		5.4E+02
1,2,3-Trichloropropane	7.8E+00			7.8E+00		7.8E+00
1,2,4-Trichlorobenzene	1.5E+03	3.9E-01	9.2E+00	3.9E-01		3.9E-01
1,2,4-Trimethylbenzene	3.7E+04	2.2E+00		2.2E+00		2.2E+00
1,2-Dibromo-3-chloropropane	1.0E+01			1.0E+01		1.0E+01
1,2-Dibromoethane	2.7E+01			2.7E+01		2.7E+01
1,2-Dichlorobenzene	6.6E+04	7.4E-01	3.4E-01	3.4E-01		3.4E-01
1,2-Dichloroethane	6.0E+02	4.3E+00		4.3E+00		4.3E+00
1,2-Dichloropropane	8.0E+02	2.8E+00		2.8E+00		2.8E+00
1,3,5-Trimethylbenzene	3.7E+04			3.7E+04		3.7E+04
1,3-Dichlorobenzene	2.2E+04	3.2E-01	1.7E+00	3.2E-01		3.2E-01
1,3-Dichloropropane	5.4E+02	4.0E-02		4.0E-02		4.0E-02
1,4-Dichlorobenzene	2.3E+03	7.0E-01	3.5E-01	3.5E-01		3.5E-01
2,2-Dichloropropane	8.0E+02			8.0E+02		8.0E+02
2-Butanone	4.4E+05			4.4E+05		4.4E+05
2-Chloroethylvinyl ether	5.0E+01			5.0E+01		5.0E+01
2-Chlorotoluene	3.1E+03			3.1E+03		3.1E+03
2-Hexanone	4.4E+04			4.4E+04		4.4E+04
4-Chlorotoluene	1.5E+04			1.5E+04		1.5E+04
4-Isopropyltoluene	7.3E+04			7.3E+04		7.3E+04
4-Methyl-2-pentanone	5.9E+04	4.5E+01		4.5E+01		4.5E+01
Acetone	6.6E+05	1.7E+02		1.7E+02		1.7E+02
Acrolein	3.7E+02			3.7E+02		3.7E+02
Acrylonitrile	1.0E+02	1.7E-01		1.7E-01		1.7E-01
Benzene	9.9E+02	1.4E-01	5.7E-02	5.7E-02		5.7E-02
Bromobenzene	1.5E+04			1.5E+04		1.5E+04
Bromodichloromethane	8.8E+02			8.8E+02		8.8E+02
Bromoform	6.9E+03	1.8E+00	6.5E-01	6.5E-01		6.5E-01
Bromomethane	1.0E+03			1.0E+03		1.0E+03

TABLE 14 - WETLAND AND POND SEDIMENT EXTENT EVALUATION COMPARISON VALUES⁽¹⁾

	Potential Prelimin	ary Screening Values (P RI/FS Work Plan ⁽²⁾			P-44'-1 6'4-	
Chemicals of Interest	TotSed _{Comb} (3)	TCEQ Ecological Benchmark for Sediment (4) TCEQ Ecological Benchmark for		PSV	Potential Site- Specific Background Values ⁽⁶⁾	Extent Evaluation Comparison Value
Butanol	7.3E+04			7.3E+04		7.3E+04
Carbon disulfide	7.3E+04			7.3E+04		7.3E+04
Carbon tetrachloride	4.2E+02	3.7E+00	1.2E+00	1.2E+00		1.2E+00
Chlorobenzene	1.5E+04	2.9E-01	8.2E-01	2.9E-01		2.9E-01
Chloroethane	2.9E+05			2.9E+05		2.9E+05
Chloroform	7.3E+03	4.3E+00		4.3E+00		4.3E+00
Chloromethane	4.2E+03	8.7E+00		8.7E+00		8.7E+00
cis-1,2-Dichloroethene	7.3E+03			7.3E+03		7.3E+03
cis-1,3-Dichloropropene	7.3E+01			7.3E+01		7.3E+01
Dibromochloromethane	6.5E+02			6.5E+02		6.5E+02
Dibromomethane	7.3E+03			7.3E+03		7.3E+03
Dichlorodifluoromethane	1.5E+05			1.5E+05		1.5E+05
Ethylbenzene	7.3E+04	6.5E-01	3.6E+00	6.5E-01		6.5E-01
Hexachlorobutadiene	3.1E+01	2.0E-02		2.0E-02		2.0E-02
Isopropylbenzene (Cumene)	7.3E+04			7.3E+04		7.3E+04
Methyl acetate	7.3E+05			7.3E+05		7.3E+05
Methyl iodide	1.0E+03			1.0E+03		1.0E+03
Methylcyclohexane	1.0E+06			1.0E+06		1.0E+06
Methylene chloride	7.3E+03	3.8E+00		3.8E+00		3.8E+00
Naphthalene	2.5E+03	1.6E-01	1.6E-01	1.6E-01		1.6E-01
n-Butylbenzene	6.1E+03			6.1E+03		6.1E+03
n-Propylbenzene	2.9E+04			2.9E+04		2.9E+04
o-Xylene	1.0E+06			1.0E+06		1.0E+06
sec-Butylbenzene	2.9E+04			2.9E+04		2.9E+04
Styrene	1.5E+05	3.7E+00		3.7E+00		3.7E+00
tert-Butyl methyl ether (MTBE)	7.3E+03			7.3E+03		7.3E+03
tert-Butylbenzene	2.9E+04			2.9E+04		2.9E+04
Tetrachloroethene	1.0E+03	3.1E+00	5.3E-01	5.3E-01		5.3E-01
Toluene	5.9E+04	9.4E-01	6.7E-01	6.7E-01		6.7E-01
trans-1,2-Dichloroethene	1.5E+04			1.5E+04		1.5E+04
trans-1,3-Dichloropropene	5.4E+02			5.4E+02		5.4E+02

TABLE 14 - WETLAND AND POND SEDIMENT EXTENT EVALUATION COMPARISON VALUES(1)

	Potential Prelimina	ary Screening Values (P RI/FS Work Plan ⁽²⁾	,				
Chemicals of Interest	TotSed _{Comb} (3)	TCEQ Ecological Benchmark for Sediment ⁽⁴⁾	EPA EcoTox Threshold (5)	PSV	Potential Site- Specific Background Values ⁽⁶⁾	Extent Evaluation Comparison Value	
Trichloroethene	4.4E+03	1.5E+00	1.6E+00	1.5E+00		1.5E+00	
Trichlorofluoromethane	2.2E+05			2.2E+05		2.2E+05	
Trichlorotrifluoroethane	1.0E+06	PM**		1.0E+06		1.0E+06	
Vinyl acetate	7.3E+05			7.3E+05		7.3E+05	
Vinyl chloride	3.6E+01			3.6E+01		3.6E+01	
Xylene (total)	1.5E+05	2.5E+00		2.5E+00		2.5E+00	
SVOCs							
1,2Diphenylhydrazine/Azobenzen	1.3E+02			1.3E+02		1.3E+02	
2,4,5-Trichlorophenol	1.5E+04			1.5E+04		1.5E+04	
2,4,6-Trichlorophenol	1.3E+03			1.3E+03		1.3E+03	
2,4-Dichlorophenol	4.6E+02			4.6E+02		4.6E+02	
2,4-Dimethylphenol	3.1E+03			3.1E+03		3.1E+03	
2,4-Dinitrophenol	3.1E+02			3.1E+02		3.1E+02	
2,4-Dinitrotoluene	2.1E+01			2.1E+01		2.1E+01	
2,6-Dinitrotoluene	2.1E+01			2.1E+01		2.1E+01	
2-Chloronaphthalene	9.9E+03			9.9E+03		9.9E+03	
2-Chlorophenol	3.7E+03			3.7E+03		3.7E+03	
2-Methylnaphthalene	4.9E+02	7.0E-02	7.0E-02	7.0E-02		7.0E-02	
2-Nitroaniline	4.6E+01			4.6E+01		4.6E+01	
2-Nitrophenol	3.1E+02			3.1E+02		3.1E+02	
3,3'-Dichlorobenzidine	3.2E+01			3.2E+01		3.2E+01	
3-Nitroaniline	4.6E+01			4.6E+01		4.6E+01	
4,6-Dinitro-2-methylphenol	3.1E+02			3.1E+02		3.1E+02	
4-Bromophenyl phenyl ether	9.5E-01		1.3E+00	9.5E-01		9.5E-01	
4-Chloro-3-methylphenol	7.7E+02			7.7E+02		7.7E+02	
4-Chloroaniline	6.1E+02			6.1E+02		6.1E+02	
4-Chlorophenyl phenyl ether	9.5E-01			9.5E-01		9.5E-01	
4-Nitroaniline	3.7E+02			3.7E+02		3.7E+02	
4-Nitrophenol	3.1E+02			3.1E+02		3.1E+02	
Acenaphthene	7.4E+03	1.6E-02	1.6E-02	1.6E-02		1.6E-02	
Acenaphthylene	7.4E+03	4.4E-02	4.4E-02	4.4E-02		4.4E-02	

TABLE 14 - WETLAND AND POND SEDIMENT EXTENT EVALUATION COMPARISON VALUES⁽¹⁾

	Potential Prelimin	ary Screening Values (P RI/FS Work Plan ⁽²⁾				
Chemicals of Interest	TCEQ Ecological Benchmark for Sediment (4)		EPA EcoTox Threshold (5)	PSV	Potential Site- Specific Background Values ⁽⁶⁾	Extent Evaluation Comparison Value
Acetophenone	1.5E+04			1.5E+04		1.5E+04
Aniline	1.1E+03			1.1E+03		1.1E+03
Anthracene	3.7E+04	8.5E-02	8.5E-02	8.5E-02		8.5E-02
Atrazine (Aatrex)	6.4E+01			6.4E+01		6.4E+01
Benzaldehyde	7.3E+04			7.3E+04		7.3E+04
Benzidine	6.2E-02		,	6.2E-02		6.2E-02
Benzo(a)anthracene	1.6E+01	2.6E-01	2.6E-01	2.6E-01		2.6E-01
Benzo(a)pyrene	1.6E+00	4.3E-01	4.3E-01	4.3E-01		4.3E-01
Benzo(b)fluoranthene	1.6E+01			1.6E+01		1.6E+01
Benzo(g,h,i)perylene	3.7E+03			3.7E+03		3.7E+03
Benzo(k)fluoranthene	1.6E+02			1.6E+02		1.6E+02
Benzoic acid	6.1E+05			6.1E+05		6.1E+05
Benzyl alcohol	4.6E+04			4.6E+04		4.6E+04
Biphenyl	7.7E+03		1.1E+00	1.1E+00		1.1E+00
Bis(2-Chloroethoxy)methane	1.3E+01			1.3E+01		1.3E+01
Bis(2-Chloroethyl)ether	5.0E+01			5.0E+01		5.0E+01
Bis(2-Chloroisopropyl)ether	2.0E+02			2.0E+02		2.0E+02
Bis(2-Ethylhexyl)phthalate	2.4E+02	1.8E-01	1.8E-01	1.8E-01		1.8E-01
Butyl benzyl phthalate	3.1E+04		1.1E+01	1.1E+01		1.1E+01
Caprolactam	7.7E+04			7.7E+04		7.7E+04
Carbazole	7.1E+02			7.1E+02		7.1E+02
Chrysene	1.6E+03	3.8E-01	3.8E-01	3.8E-01		3.8E-01
Dibenz(a,h)anthracene	1.6E+00	6.3E-02	6.3E-02	6.3E-02		6.3E-02
Dibenzofuran	6.1E+02		2.0E+00	2.0E+00		2.0E+00
Diethyl phthalate	1.2E+05		6.3E-01	6.3E-01		6.3E-01
Dimethyl phthalate	1.2E+05			1.2E+05		1.2E+05
Di-n-butyl phthalate	1.5E+04		1.1E+01	1.1E+01		1.1E+01
Di-n-octyl phthalate	3.1E+03			3.1E+03		3.1E+03
Fluoranthene	4.9E+03	6.0E-01	6.0E-01	6.0E-01		6.0E-01
Fluorene	4.9E+03	1.9E-02	1.9E-02	1.9E-02		1.9E-02
Hexachlorobenzene	8.9E+00			8.9E+00		8.9E+00

TABLE 14 - WETLAND AND POND SEDIMENT EXTENT EVALUATION COMPARISON VALUES(1)

	Potential Preliminary Screening Values (PSVs) from Table 21 of RI/FS Work Plan ⁽²⁾					
Chemicals of Interest	TotSed _{Comb} (3)	TCEQ Ecological Benchmark for Sediment ⁽⁴⁾	EPA EcoTox Threshold (5)	PSV	Potential Site- Specific Background Values ⁽⁶⁾	Extent Evaluation Comparison Value
Hexachlorocyclopentadiene	9.2E+02			9.2E+02		9.2E+02
Hexachloroethane	1.5E+02		1.0E+00	1.0E+00		1.0E+00
Indeno(1,2,3-cd)pyrene	1.6E+01			1.6E+01		1.6E+01
Isophorone	1.5E+04			1.5E+04		1.5E+04
Nitrobenzene	7.7E+01			7.7E+01		7.7E+01
n-Nitrosodimethylamine	1.1E+00			1.1E+00		1.1E+00
n-Nitrosodi-n-propylamine	6.3E-01			6.3E-01		6.3E-01
n-Nitrosodiphenylamine	9.0E+02			9.0E+02		9.0E+02
o-Cresol	7.7E+03			7.7E+03		7.7E+03
Pentachlorophenol	5.6E+01	***		5.6E+01		5.6E+01
Phenanthrene	3.7E+03	2.4E-01	2.4E-01	2.4E-01		2.4E-01
Phenol	4.6E+04			4.6E+04		4.6E+04
Pyrene	3.7E+03	6.7E-01	6.7E-01	6.7E-01		6.7E-01
Pyridine	7.3E+02			7.3E+02		7.3E+02
Chloride				NV	NV	NV
Sulfate				NV	NV	NV NV
Total Moisture				NV	NV	NV NV
Total Organic Carbon				NV	NV	NV NV

- 1. All values in mg/kg.
- 2. Values from Table 21 of RI/FS Work Plan (updated to reflect changes since 2005 where applicable).
- 3. TotSed_{Comb} PCL = TCEQ Protective Concentration Level for total sediment combined pathway (includes inhalation; ingestion; dermal pathways).
- 4. From Table 3-3 of TCEQ "Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas".
- 5. From Table 2 of EPA "Ecotox Thresholds" ECO Update January 1996.
- 6. 95% UTL calculated from site-specific background samples.
- 7. Value listed is for total Chlordane.
- 8. NV = No Preliminary Screening Value.

TABLE 15 - DETECTED WETLAND SEDIMENT CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES

				Extent Evaluation Comparison Value ⁽¹⁾
Sample Location	Sample Depth (ft)	Chemical of Interest	Concentration (mg/kg)	(mg/kg)
NA1SE01	0-0.5	4,4' - DDT	0.00204J	0.00119
NA2SE02	0-0.5	4,4'-DDT	0.00194J	0.00119
NA3SE03	0-0.5	4,4'-DDT	0.0016J	0.00119
NA4SE04	0-0.5	4,4'-DDT	0.00454J	0.00119
NB1SE05	0-0.5	Nickel	23.1	20.9
		2-Methylnaphthalene	0.43	0.07
NB2SE06	1-2	Acenaphthene	0.037J	0.016
		Fluorene	0.088	0.019
NB3SE07	0-0.5	4,4'-DDT	0.00186J	0.00119
		4,4'-DDT	0.00922J+	0.00119
		Acenaphthene	0.113	0.016
		Anthracene	0.188	0.0853
		Benzo(a)anthracene	0.993	0.261
		Benzo(a)pyrene	1.3Ј	0.43
		Chrysene	1.27	0.384
ND 40E00	0-0.5	Copper	39.6	34
NB4SE08	0-0.5	Dibenz(a,h)anthracene	0.337Ј-	0.0634
		Fluoranthene	2.17	0.6
		Fluorene	0.127	0.019
		Lead	88.1	46.7
		Phenanthrene	1.3	0.24
		Pyrene	1.64J-	0.665
		Zinc	601	280
NC3SE11	0-0.5	4,4'-DDT	0.00143J	0.00119
NC4SE12	0-0.5	4,4'-DDT	0.00468J+	0.00119

TABLE 15 - DETECTED WETLAND SEDIMENT CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES

				Extent Evaluation Comparison Value ⁽¹⁾
Sample Location	Sample Depth (ft)		Concentration (mg/kg)	' (mg/kg)
	·	4,4'-DDT	0.00254J+	0.00119
		Arsenic	12.8	8.66
NF4SE13	0-0.5	Copper	35.7	34
NI 40E13	0-0.5	Lead	64.7	46.7
		Nickel	27.7	20.9
		Zinc	903	280
NG1SE14	0-0.5	Nickel	23.8	20.9
NG2SE15	0-0.5	4,4'-DDT	0.00189Ј	0.00119
NG4GE17	0-0.5	Dieldrin	0.00266	0.000715
NG4SE17	0-0.5	Zinc	255	280
	0-0.5	Acenaphthylene	0.346J	0.044
		Anthracene	0.241J	0.0853
ATTICE DA		Benzo(a)pyrene	0.631J	0.43
2WSED3		Chrysene	2.73	0.384
		Dibenz(a,h)anthracene	2.83	0.0634
		Pyrene	0.729J	0.665
		4,4'-DDE	0.00256J	0.00207
		Acenaphthylene	0.545J	0.044
		Anthracene	0.334J	0.0853
		Benzo(a)pyrene	0.972	0.43
2WSED4	0-0.5	Chrysene	4.05	0.384
		Dibenz(a,h)anthracene	2.91	0.0634
		Dieldrin	0.00211J	0.000715
		Nickel	21.3	20.9
		Pyrene	1.18	0.665
	0.05	Acenaphthylene	0.139J	0.044
2WSED5	0-0.5	Dibenz(a,h)anthracene	1.83	0.0634

TABLE 15 - DETECTED WETLAND SEDIMENT CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES

Comple Legation	Sample Depth (ft)	Chemical of Interest	Concentration (mg/kg)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/kg)
Sample Location	Sample Depth (1t)			0.00119
2WSED9	0-0.5	4,4'-DDT	0.00206J	i l
		Dibenz(a,h)anthracene	0.129	0.0634
2WSED10	0-0.5	4,4'-DDT	0.0015J	0.00119
2WSED12	0-0.5	4,4'-DDT	0.00212J	0.00119
		Chrysene	0.39J	0.384
AWGED16	0.05	Copper	49	34
2WSED15	0-0.5	Lead	50	46.7
		Zinc	539	280
		Acenaphthene	0.133	0.016
		Anthracene	0.257	0.0853
		Benzo(a)anthracene	0.724	0.261
		Benzo(a)pyrene	0.618	0.43
		Chrysene	0.743	0.384
	0.05	Dibenz(a,h)anthracene	0.312	0.0634
2WSED17	0-0.5	Fluoranthene	1.43	0.6
		Fluorene	0.139	0.019
		Lead	237	46.7
		Phenanthrene	1.18	0.24
		Pyrene	1.34	0.665
	1	Zinc	404	280
3WSED9	0-0.5	Zinc	319 J	280

⁽¹⁾ Extent Evaluation Comparison Values from Table 14.

⁽²⁾ Data Qualifiers: J = estimated value; J- = estimated value, biased low; J+ = estimated value, biased high.

TABLE 16 - DETECTED WETLAND SURFACE WATER CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES

Sample Location	Chemical of Interest	Total or Dissolved	Concentration (mg/L)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/L)
	Acrolein	Total	0.00929J	0.005
2WSW1	Copper	Dissolved	0.011J	0.0036
	Mercury	Total	0.00004J	0.000025
	Copper	Dissolved	0.0053J	0.0036
2WSW2	Mercury	Dissolved	0.00011J	0.000025
	Wiercury	Total	0.00007J	0.000025
	Copper	Dissolved	0.0068J	0.0036
2WSW6	Manganese	Total	0.34	0.1
	Intailgailese	Dissolved	0.33	0.1

⁽¹⁾ Extent Evaluation Comparision Values from Table 4.

⁽²⁾ Data Qualifier: J = estimated value.

TABLE 17 - DETECTED POND SEDIMENT CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES

Sample Location	Chemical of Interest	Concentration (mg/kg)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/kg)
SPSE01	Zinc	614	280
SPSE02	Zinc	813	280
SPSE03	4,4'-DDT	0.00157J	0.00119
SFSE03	Zinc	999	280

- (1) Extent Evaluation Comparison Values from Table 14.
- (2) Data Qualifier: J = estimated value.

TABLE 18 - DETECTED POND SURFACE WATER CONCENTRATIONS EXCEEDING EXTENT EVALUATION COMPARISON VALUES

Sample Location	Chemical of Interest	Total or Dissolved	Concentration (mg/L)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/L)	
	Arsenic	Total	0.013J	0.0014	
FWPSW01	Silver	Dissolved	0.0027J	0.00019	
	Thallium	Total	0.0077J	0.00047	
EMBOMO	Arsenic	Total	0.012J	0.0014	
FWPSW02	Silver	Dissolved	0.0021J	0.00019	
DIVIDOU 102	Silver	Dissolved	0.0029J	0.00019	
FWPSW03	Thallium	Total	0.0062J	0.00047	
-	Manganese	Total	1.29	0.1	
aparro1	Manganese	Dissolved	1.06	0.1	
SPSW01	Silver	Dissolved	0.00095J	0.00019	
	Thallium	Dissolved	0.0014J	0.00047	
	Manganese	Total	1.44	0.1	
anarros.	Manganese	Dissolved	0.89	0.1	
SPSW02	Silver	Dissolved	0.00094J	0.00019	
	Thallium	Dissolved	0.0032J	0.00047	
	Manganese	Total	0.82	0.1	
aparros.	Manganese	Dissolved	0.74	0.1	
SPSW03	Silver	Dissolved	0.0014J	0.00019	
	Thallium	Dissolved	0.0019Ј	0.00047	

- (1) Extent Evaluation Comparison Values from Table 4.
- (2) Data Qualifier: J = estimated value.

TABLE 19 - DETECTED CONCENTRATIONS IN SBMW29-01 AND SBMW30-01 SOIL SAMPLES

Sample Location	Sample Depth (ft)	Chemical of Interest	Concentration (mg/kg)
		1,1,1-Trichloroethane	3750
		1,1-Dichloroethane	67.3J
	•	1,1-Dichloroethene	128J
		1,2,3-Trichloropropane	471
		1,2-Dichloroethane	595
		Benzene	84.3J
		Benzo(b)fluoranthene	0.017J
CDM 11/20 01	10 5 10 5	Fluoranthene	0.03J
SBMW29-01	12.5-13.5	Fluorene	0.013J
		Isopropylbenzene (Cumene)	93.7J
		Methylene chloride	1130
		Naphthalene	102J
		Phenanthrene	0.057J
		Tetrachloroethene	4340
		Toluene	108J
		Trichloroethene	2150
		1,1,1-Trichloroethane	4590
		1,2,3-Trichloropropane	1220
		2-Methylnaphthalene	52.8
		Acenaphthene	18.9J
		Acenaphthylene	11.5
		Aldrin	0.037
		Anthracene	18
		Benzo(a)anthracene	31.9
		Benzo(a)pyrene	18.4
		Benzo(b)fluoranthene	37.7
		Benzo(g,h,i)perylene	20.4
		Biphenyl	12.1J
		Carbazole	15.2
		Chrysene	36.8
SBMW30-01	33.6-34.1	Dibenz(a,h)anthracene	8.93
		Dibenzofuran	29.9
		Endosulfan II	0.025J
		Endrin aldehyde	0.049J
		Fluoranthene	86.1
		Fluorene	44.1
		gamma-BHC (Lindane)	0.00796J
		Heptachlor epoxide	0.167J
		Indeno(1,2,3-cd)pyrene	19.5
		Naphthalene	317J
		Phenanthrene	172
		Pyrene	80
		Tetrachloroethene	8420
٠		Toluene	170J
		Trichloroethene	6610

(1) Data qualifier: J =estimated value.

TABLE 20 - MONITORING WELL/PIEZOMETER CONSTRUCTION INFORMATION

Well Name	Top of Casing (TOC) Elevation (Feet Above Mean Sea Level) ⁽¹⁾	Ground Surface Elevation (Feet Above Mean Sea Level) ⁽¹⁾	Total Boring Depth (Feet below Ground Surface)	Monitoring Well/Piezometer Screened Interval (Feet below Ground Surface)
Zone A				
ND2MW01	5.09	1.9	17.0	5.0-15.0
ND3MW02	6.41	3.7	22.0	11.5-21.5
ND4MW03	6.20	3.2	20.0	7.5-17.5
NE1MW04	4.90	2.1	17.0	6.5-16.5
NE3MW05	6.53	3.3	22.0	5-15.5
NF2MW06	5.35	2.2	20.0	6.0-16.0
SB4MW07	7.57	4.6	20.0	9.5-19.5
SE1MW08	7.54	4.4	20.0	8.5-18.5
SE6MW09	7.66	4.7	20.0	9.5-19.5
SF5MW10	8.01	5.0	20.0	9.0-19.0
SF6MW11	8.11	5.0	20.0	8.0-18.0
SF7MW12	7.96	4.7	20.0	8.5-18.5
SG2MW13	7.71	4.5	22.0	6.0-16.0
SH7MW14	8.10	5.2	22.0	10.0-20.0
SJ1MW15	5.61	2.5	25.0	10.0-20.0
SJ7MW16	7.19	4.7	25.0	12.5-22.5
SL8MW17	5.87	2.9	33.0	15.0-25.0
NB4MW18	4.96	2.5	20.0	7.5-17.5
NG3MW19	5.08	2.2	17.0	4.0-13.5
OMW20	4.88	1.6	17.5	6.0-15.5
OMW21	5.73	2.4	20.0	8.0-18.0
SA4MW22	7.79	5.5	15.0	4.5-14.5
NC2MW28	4.76	1.8	15.0	5-14.5
ND3MW29	5.33	2.9	17.5	7.0-17.0
NB4PZ01	NM ⁽²⁾	2.3	22.0	9.0-19.0
NC3PZ02	NM	2.9	28.0	12.5-22.5
ND1PZ03	NM	2.2	18.0	5.5-15.5
ND3PZ04	NM	2.4	20.0	7.0-17.0
NF1PZ05	NM	2.2	18.0	8.0-18.0
NF3PZ06	NM	2.5	16.0	3-13
SA4PZ07	NM	5.4	24.0	12-22
SD3PZ08	NM	5.6	28.0	12-22

TABLE 20 - MONITORING WELL/PIEZOMETER CONSTRUCTION INFORMATION

Well Name	Top of Casing (TOC) Elevation (Feet Above Mean Sea Level) ⁽¹⁾	Ground Surface Elevation (Feet Above Mean Sea Level) ⁽¹⁾	Total Boring Depth (Feet below Ground Surface)	Monitoring Well/Piezometer Screened Interval (Feet below Ground Surface)
Zone B				
NC2B23B	NA ⁽³⁾	2.0	40.0	NA
ND4MW24B	5.70	3.5	34.0	21.5-26.5
NG3MW25B	4.91	2.2	35.0	17.0-27.0
OB26B	NA	1.6	40.0	NA
OMW27B	5.45	2.8	30.0	24.5-27
NE3MW30B	6.70	3.5	35.5	25-35
NE4MW31B	6.01	3.0	45.0	18-28
Zone C				
NG3CPT1	5.79	2.1	73.0	63-73
NE4CPT2	6.77	3.2	73.0	63-73
NC2CPT3	5.36	1.7	69.0	59-69
OCPT4	6.38	2.7	73.0	63-73
OCPT5	5.32	1.5	80.0	59-64,69-74
NE4MW32C	6.31	3.2	80.0	64-74

- (1) Mean Sea Level NGVD 1929.
- (2) NM = Not measured. Temporary piezometer at this location.
- (3) NA = Not Applicable. Well not constructed in this boring Zone B not present.

TABLE 21 -SLUG TEST RESULTS

Well Number	Test Type	Water-Bearing Unit Type	Water-Bearing Zone	Water-Bearing Unit Thickness (ft)	Hydraulic Conductivity (cm/sec)
ND4MW03	Slug	Confined	A	13	8 x 10 ⁻⁵
NE1MW04	Slug	Confined	A	12	4 x 10 ⁻⁵
SJ1MW15	Slug	Confined	A	12.5	7 x 10 ⁻⁵
ND4MW24B	Slug	Confined	В	5	1 x 10 ⁻⁴
NG3MW25B	Slug	Confined	В	16	5 x 10 ⁻⁴
OMW27B	Slug	Confined	В	3	2 x 10 ⁻⁵

TABLE 22 - WATER LEVEL MEASUREMENTS

Well ID	Ground Surface Elevation (ft AMSL ²)	Total Boring Depth (ft BGS ³)	Screened Interval (ft BGS ³)	Date	TOC ¹ Elevation (ft	Depth to Water (ft BTOC ⁴)	Water Elevation (ft AMSL ²)
	•			8/4/2006	5.09	3.94	1.15
				10/5/2006	5.09	3,95	1.14
		•		6/6/2007	5.09	4.23	0.86
ND2MW01	1.9	17.0	5.0-15.0	9/6/2007	5.09	4.02	1.07
	[11/7/2007	5.09	4.31	0.78
				12/3/2007	5.09	4.13	0.96
				6/17/2008	5.09	5.99	-0.90
-			,	8/4/2006	6.41	4.21	2.20
				10/5/2006	6.41	4.27	2.14
				6/6/2007	6.41	4,59	1.82
ND3MW02	3.7	22.0	11.5-21.5	9/6/2007	6.41	4.27	2.14
				11/7/2007	6.41	4.93	1.48
		1		12/3/2007	6.41	4.46	1.95
				6/17/2008	6.41	6.67	-0.26
				8/4/2006	6.20	4.11	2.09
				10/5/2006	6,20	4.13	2.07
				6/6/2007	6.20	4.42	1.78
ND4MW03	3.2	20.0	7.5-17.5	9/6/2007	6.20	3.84	2,36
				11/7/2007	6.20	4.47	1.73
				12/3/2007	6,20	3.73	2.47
				6/17/2008	6.20	6.31	-0.11
				8/4/2006	4.90	4.81	0.09
			10/5/2006	4.90	3.87	1.03	
			6.5-16.5	6/6/2007	4.90	4.12	0.78
NE1MW04	2.1	17.0		9/6/2007	4.90	3.93	0.97
				11/7/2007	4.90	3.62	1.28
				12/3/2007	4.90	3.47	1.43
				6/17/2008	4.90	5,43	-0.53
				8/4/2006	6.53	3.60	2.93
				10/5/2006	6,53	3,66	2.87
				6/6/2007	6.53	3.92	2.61
NE3MW05	3.3	22.0	5-15.5	9/6/2007	6.53	3.63	2.90
		·		11/7/2007	6.53	5.21	1.32
				12/3/2007	6.53	5.03	1.50
				6/17/2008	6.53	6,33	0.20
				8/4/2006	5,35	3.71	1.64
				10/5/2006	5.35	3.79	1.56
				6/6/2007	5.35	4.06	1,29
NF2MW06	2.2	20,0	6.0-16.0	9/6/2007	5.35	3.89	1.46
				11/7/2007	5.35	3.57	1.78
				12/3/2007	5.35	3.27	2.08
				6/17/2008	5.35	4,93	0.42
-				8/4/2006	7.57	6.60	0.97
				10/5/2006	7.57	5.65	1.92
				6/6/2007	7.57	5,38	2,19
SB4MW07	4.6	20.0	9.5-19.5	9/6/2007	7.57	5.57	2.00
				11/7/2007	7.57	6.06	1.51
				12/3/2007	7.57	6.14	1.43
				6/17/2008	7.57	5.92	1.65
				8/4/2006	7.54	5.19	2.35
				10/5/2006	7.54	5,36	2.18
				6/6/2007	7.54	5.37	2,17
SE1MW08	4.4	20.0	8.5-18.5	9/6/2007	7.54	5.31	2,23
	1			11/7/2007	7.54	6.03	1,51
				12/3/2007	7.54	5.21	2.33
		1	1	6/17/2008	7.54	6.81	0.73

TABLE 22 - WATER LEVEL MEASUREMENTS

Well ID	Ground Surface Elevation (ft AMSL ²)	Total Boring Depth (ft BGS ³)	Screened Interval (ft BGS ³)	Date	TOC ¹ Elevation (ft	Depth to Water (ft BTOC ⁴)	Water Elevation (ft AMSL ²)
				8/4/2006	7.66	6.04	1.62
				10/5/2006	7.66	5.84	1.82
				6/6/2007	7.66	5.82	1.84
SE6MW09	4.7	20.0	9.5-19.5	9/6/2007	7.66	5,72	1.94
				11/7/2007	7.66	6.09	1.57
				12/3/2007	7.66	5.74	1.92
				6/17/2008	7.66	6.43	1.23
				8/4/2006	8.01	5.88	2.13
				10/5/2006	8.01	6.01	2.00
				6/6/2007	8.01	5.79	2.22
SF5MW10	5.0	20.0	9.0-19.0	9/6/2007	8.01	5.75	2,26
				11/7/2007	8.01	5.97	2.04
				12/3/2007	8.01	6.01	2.00
				6/17/2008	8.01	7.03	0.98
				8/4/2006	8.11	6.62	1.49
				10/5/2006	8.11	6.43 6.37	1.68 1.74
GE (3 63711	50	20.0	0.010.0	6/6/2007	8.11		1.74
SF6MW11	5.0	20,0	8.0-18.0	9/6/2007 11/7/2007	8.11 8.11	6.34 6.71	1.40
				12/3/2007	8.11	6.39	1.72
				6/17/2008	8.11	6.97	1.14
				8/4/2006	7.96	6.41	1.55
			20.0 8.5-18.5	10/5/2006	7.96	6.15	1.81
				6/6/2007	7.96	6,52	1.44
SF7MW12	4.7	20.0		9/6/2007	7.96	6.59	1.37
22 / 112 / 12				11/7/2007	7.96	6.64	1.32
				12/3/2007	7,96	6.44	1,52
				6/17/2008	7.96	6.76	1.20
				8/4/2006	7.71	5.65	2.06
				10/5/2006	7.71	5.96	1.75
				6/6/2007	7.71	5.62	2,09
SG2MW13	4.5	22.0	6.0-16.0	9/6/2007	7.71	5,56	2.15
				11/7/2007	7.71	6,68	1.03
				12/3/2007	7.71	6.07	1.64
				6/17/2008	7.71	7.18	0.53
				8/4/2006	8.10	6.41	1.69
				10/5/2006	8.10	6.36	1.74
			40000	6/6/2007	8.10	6.02	2.08
SH7MW14	5.2	22.0	10.0-20.0	9/6/2007	8.10	6.21	1.89
				11/7/2007	8.10	6.74	1.36
				12/3/2007	8.10	6.43	1.67
	 			6/17/2008 8/4/2006	8.10 5.61	6.84 4.17	1.26 1.44
				10/5/2006	5.61	4.17	1.44
				6/6/2007	5.61	4.09	1,52
SJ1MW15	2.5	25.0	10.0-20.0	9/6/2007	5.61	3.47	2.14
רז אא זאז זייי	L.2	23,0	10.0-20.0	11/7/2007	5,61	3.58	2.03
				12/3/2007	5.61	3.47	2.14
				6/17/2008	5.61	5,47	0.14
				8/4/2006	7.19	5.81	1.38
	1.			10/5/2006	7.19	5.49	1.70
				6/6/2007	7.19	5.16	2.03
SJ7MW16	4.7	25.0	12.5-22.5	9/6/2007	7.19	5.23	1.96
				11/7/2007	7.19	5.88	1.31
				12/3/2007	7.19	6.51	0.68
]			6/17/2008	7.19	5.68	1.51

TABLE 22 - WATER LEVEL MEASUREMENTS

Well ID	Ground Surface Elevation (ft AMSL ²)	Total Boring Depth (ft BGS ³)	Screened Interval (ft BGS ³)	Date	TOC ¹ Elevation (ft	Depth to Water (ft BTOC ¹)	Water Elevation (ft AMSL ²)
***************************************				8/4/2006	5,87	4.51	1.36
				10/5/2006	5.87	4.21	1.66
•				6/6/2007	5.87	3.93	1.94
SL8MW17	2.9	33.0	15.0-25.0	9/6/2007	5.87	4.07	1.80
				11/7/2007	5,87	4.43	1.44
				12/3/2007	5.87	4.81	1.06
				6/17/2008	5.87	4.51	1.36
				6/6/2007	4.96	16.32	-11.36
				9/6/2007	4.96	3.17	1.79
NB4MW18	2.5	20,0	7.5-17.5	11/7/2007	4.96	4.19	0.77
				12/3/2007	4.96	3.68	1,28
				6/17/2008	4.96	5.89	-0.93
				6/6/2007	5.08	3,58	1.50
				9/6/2007	5.08	3.29	1.79
NG3MW19	2.2	17.0	4.0-13.5	11/7/2007	5.08	3.77	1.31
				12/3/2007	5.08	3,29	1.79
			:	6/17/2008	5.08	4.38	0.70
				6/6/2007	4.88	4.16	0.72
			6.0-15.5	9/6/2007	4.88	3,76	1.12
OMW20	1.6	17.5		11/7/2007	4.88	3.01	1.87
				12/3/2007	4.88	2.84	2.04
				6/17/2008	4.88	4.16	0.72
•		20.0	8.0-18.0	6/6/2007	5.73	4.17	1.56
				9/6/2007	5.73	3.96	1.77
OMW21	2.4			11/7/2007	5.73	5.07	0.66
				12/3/2007	5.73	4.86	0.87
				6/17/2008	5.73	6.12	-0.39
				6/6/2007	7.79	6.27	1.52
				9/6/2007	7.79	6.34	1.45
SA4MW22	5.5	15.0	4.5-14.5	11/7/2007	7.79	6,57	1.22
		·	1.5 1 1.5	12/3/2007	7.79	6.72	1.07
				6/17/2008	7.79	6,86	0.93
				6/6/2007	5.70	3,81	1.89
				9/6/2007	5.70	3.41	2.29
			21.506.5	11/7/2007	5.70	3.78	1.92
ND4MW24B	3.5	34.0	21.5-26.5	12/3/2007	5.70	3,32	2.38
				6/17/2008	5.70	5.48	0,22
				7/30/2008	5.70	4.22	1.48
				6/6/2007	4.91	3,17	1.74
				9/6/2007	4.91	3.01	1,90
NG0) 6770 67	0.0	25.0	170070	11/7/2007	4.91	3.15	1.76
NG3MW25B	2.2	35.0	17.0-27.0	12/3/2007	4.91	2.94	1.97
				6/17/2008	4.91	3.69	1.22
				7/30/2008	4.91	3,26	1.65
		-		6/6/2007	5.45	3.26	2.19
				9/6/2007	5.45	3.04	2.41
O) WYOOD	0.0	20.05] 24.5.25	11/7/2007	5.45	4.34	1.11
OMW27B 2.8	2,8	2.8 30.0	24.5-27	12/3/2007	5.45	4.17	1.28
] !	6/17/2008	5,45	5.47	-0.02
•				7/30/2008	5.45	4.27	1.18
				6/6/2007	4.76	2.83	1.93
				9/6/2007	4.76	2.42	2.34
NC2MW28	1.8	15.0	5-14.5	11/7/2007	4.76	2.86	1.90
				12/3/2007	4.76	2.51	2.25
				6/17/2008	4,76	4.27	0.49

TABLE 22 - WATER LEVEL MEASUREMENTS

Well ID	Ground Surface Elevation (ft AMSL ²)	Total Boring Depth (ft BGS ³)	Screened Interval (ft BGS³)	Date	TOC ¹ Elevation (ft	Depth to Water (ft BTOC ⁴)	Water Elevation (ft AMSL ²)	
				6/6/2007	5.33	3.91	1.42	
				9/6/2007	5.33	3.58	1.75	
ND3MW29	2.9	17.5	7.0-17.0	11/7/2007	5.33	4.38	0.95	
			•	12/3/2007	5,33	3.27	2.06	
				6/17/2008	5.33	5.63	-0.30	
		25.5	250250	12/3/2007	6.70	4.78	1.92	
NE3MW30B	3,5	35.5	25.0-35.0	6/17/2008	6.70	NM 5.08	NM 1.62	
		<u> </u>		7/30/2008 6/17/2008	6.70 6.01	5.04	0.97	
NE4MW31B	3.0	45.0	18.0-28.0	7/30/2008	6.01	4.59	1,42	
				6/17/2008	6.31	8.62	-2.31	
				7/30/2008	6.31	7.29	-0.98	
NE4MW32C	3.2	80.0	64.0-74.0	9/29/2008	6,31	7.48	-1.17	
				1/13/2009	6.31	7.22	-0.91	
				6/9/2008	5.79	9.82	-4.03	
				6/17/2008	5.79	9.47	-3.68	
NG3CPT1	5.8	73.0	63.0-73.0	7/30/2008	5.79	9.41	-3.62	
	1			9/29/2008	5.79	6.09	-0.30	
				1/13/2009	5.79	6.93	-1.14	
				6/9/2008	6.77	9,99	-3.22	
NE 4 OPTO		73.0	72.0	62 0 72 0	6/17/2008	6.77	10.32	-3.55 -3.54
NE4CPT2	6.8		3.0 63.0-73.0	7/30/2008 9/29/2008	6.77	10.31 9.88	-3.11	
					1/13/2009	6.77	9.86	-3.09
				6/9/2008	5.36	11.39	-6.03	
		69.0	59.0-69.0	6/17/2008	5,36	11,48	-6.12	
NC2CPT3	5.4			7/30/2008	5.36	11.30	-5.94	
1,020110				9/29/2008	5.36	11.29	-5.93	
				1/13/2009	5.36	8.72	-3.36	
				6/9/2008	6.38	12.25	-5.87	
				6/17/2008	6.38	12.46	-6.08	
OCPT4	6.4	73.0	73.0 63.0-73.0	7/30/2008	6.38	12.93	-6.55	
				9/29/2008	6,38	12.97	-6.59	
				1/13/2009	6.38	13.16	-6.78	
OCPT5	1.5	80.0	59-64,69-74	1/13/2009	5.32 6.75	12.72 4.12	-7.40 2.63	
				8/4/2006	6.75	4.12	2.37	
				10/5/2006 6/6/2007	6.75	4.17	2.58	
MW-1	4.9	20.0	Not Available	9/6/2007	6.75	4.21	2.54	
141 44 - 1	7.5	20.0	110071744114010	11/7/2007	6.75	NM	NM	
				12/3/2007	6.75	NM	NM	
		i		6/17/2008	6.75	5.39	1.36	
				8/4/2006	5.88	4.79	1.09	
				10/5/2006	5.88	3,85	2.03	
				. 6/6/2007	5.88	3.58	2.30	
MW-2	4.5	15.0	Not Available	9/6/2007	5.88	3.64	2.24	
				11/7/2007	5.88	NM	NM	
			1	12/3/2007	5.88	NM	NM 0.65	
		-		6/17/2008	5.88	5.23	0.65	
		1		8/4/2006	7.23	5.74 5.58	1.49 1.65	
				10/5/2006 6/6/2007	7.23	5.34	1.89	
MW-3	4.5	16.0	Not Available	9/6/2007	7.23	5.41	1.82	
747 44 -7	4.5	10.0	11007174114010	11/7/2007	7.23	NM	NM	
			12/3/2007	7.23	NM	NM		
		1		6/17/2008	7.23	6.34	0,89	
-				8/4/2006	5.15	2.54	2.61	
				10/5/2006	5.15	2.64	2.51	
HMW-1	3.3	18.0	8.0-18.0	6/6/2007	5.15	2.89	2.26	
LITAT AA - I	3,3	18.0	0.0-10.0	9/6/2007	5.15	2.61	2.54	
				11/7/2007	5.15	NM	NM	
	i		1	12/3/2007	5.15	NM	NM	

TABLE 22 - WATER LEVEL MEASUREMENTS

Well ID	Ground Surface Elevation (ft AMSL ²)	Total Boring Depth (ft BGS ³)	Screened Interval (ft BGS ³)	Date	TOC ¹ Elevation (ft	Depth to Water (ft BTOC ⁴)	Water Elevation (ft AMSL ²)
				8/4/2006	4.69	3.59	1.10
				10/5/2006	4.69	3.71	0.98
			00100	6/6/2007	4.69	3.93	0.76
HMW-2	2.6	18.0	8.0-18.0	9/6/2007	4.69	3.63	1.06
				11/7/2007	4.69	NM	NM
				12/3/2007	4.69	NM	NM
	† · · · · · · · · · · ·			8/4/2006	5.20	3.48	1.72
				10/5/2006	5.20	3.49	1.71
*******	1	18.0	8.0-18.0	6/6/2007	5.20	3.78	1.42
HMW-3	3.2			9/6/2007	5,20	3.54	1.66
				11/7/2007	5.20	NM	NM
	İ			12/3/2007	5.20	NM	NM
			Not applicable - Staff Gauge	10/5/2006	3.53	1.94	1.59
				9/6/2007	3.53	1.55	1.98
	Not applicable -			11/7/2007	3,53	1.61	1.92
BM-1	Staff Gauge			12/3/2007	3.53	1.49	2.04
	Starr Gauge			6/17/2008	3.53	0.73 ⁶	2.80 ⁶
				7/30/2008	3,53	0.51 ⁶	3.02 ⁶
				10/5/2006	3,30	1.76	1.54
				9/6/2007	3.30	1.35	1,95
	Not applicable -	Not applicable	Not applicable -	11/7/2007	3.30	1.42	1.88
BM-2	Staff Gauge	Staff Gauge	Staff Gauge	12/3/2007	3.30	1.29	2.01
				6/17/2008	3.30	1.42	1.88
		ĺ		7/30/2008	3.30	1.45	1.85
	 			10/5/2006	5.10	3.41	1.69
				9/6/2007	5.10	3,60	1.50
BM-3	1	Not applicable	Not applicable -	11/7/2007	5.10	NM	NM
	Staff Gauge	Staff Gauge	Staff Gauge	12/3/2007	5.10	4,60	0.50
				6/17/2008	5.10	3.61	1.49

¹ TOC = Top of PVC Well Casing.

² AMSL = Above Mean Sea Level (NGVD 29).

³BGS = Below Ground Surface

⁴ BTOC = Below TOC.

⁵NM = not measured.

⁶Settlement/damage to BM-1 staff gauge occurred after 12/07.

TABLE 23 - GROUNDWATER EXTENT EVALUATION COMPARISON VALUES⁽¹⁾

	Potential Prelimi			
Chemicals of Interest	GWGWClass 3 (3)	AirGW _{Inh-V} ⁽⁴⁾	TCEQ Ecological Benchmark for Water ⁽⁵⁾	Extent Evaluation Comparison Value
METALS				
Aluminum	7.3E+03	_		7.3E+03
Antimony	6.0E-01			6.0E-01
Arsenic	1.0E+00		7.8E-02	7.8E-02
Barium	2.0E+02	-	2.5E+01	2.5E+01
Beryllium	4.0E-01	-		4.0E-01
Boron	1.5E+03			1.5E+03
Cadmium	5.0E-01		1.0E-02	1.0E-02
Chromium	1.0E+01		1.0E-01	1.0E-01
Chromium (VI)	1.0E+01		5.0E-02	5.0E-02
Cobalt	4.4E+02			4.4E+02
Copper	1.3E+02		3.6E-03	3.6E-03
Ferric Iron				NV
Iron				NV
Lead	1.5E+00		5.3E-03	5.3E-03
Lithium	1.5E+02			1.5E+02
Manganese	1.0E+03			1.0E+03
Mercury	2.0E-01	1.3E+00	1.1E-03	1.1E-03
Molybdenum	3.7E+01			3.7E+01
Nickel	1.5E+02		1,3E-02	1.3E-02
Selenium	5.0E+00		1.4E-01	1.4E-01
Silver	3.7E+01		1.9E-04	1.9E-04
Strontium	4.4E+03			4.4E+03
Thallium	2.0E-01		2.1E-02	2.1E-02
Tin	4.4E+03		2.115-02	4.4E+03
Titanium	3.7E+06			3.7E+06
	5.1E+01			5.1E+01
Vanadium	2,2E+03		8.4E-02	8.4E-02
Zinc PESTICIDES	2,2E+03		0.45-02	0.4L-02
	8,5E-01		2.5E-05	2.5E-05
4,4'-DDD	6.0E-01		1.4E-04	1.4E-04
4,4'-DDE	6.0E-01	1.4E+02	1.0E-06	1.0E-06
4,4'-DDT	1.2E-02	9.6E-01	1.3E-04	1.3E-04
Aldrin	3.2E-02	3.3E+01	2.5E-02	2.5E-02
alpha-BHC alpha-Chlordane	5.8E-01	3.3E+01	2.515-02	5.8E-01
	1.1E-01	2.5E+02		1.1E-01
beta-BHC	1.1E-01 1,1E-01	7.9E+01		1.1E-01
delta-BHC			2.0E-06	2.0E-06
Dieldrin	1.3E-02	2.8E+01	9.0E-06	9.0E-06
Endosulfan I	1.5E+01	1.6E+02	9.0E-06	9.0E-06
Endosulfan II	4.4E+01		9.0E-06	9.0E-06 9.0E-06
Endosulfan sulfate	4.4E+01	5.077.02	2.0E-06	2.0E-06
Endrin	2.0E-01	5,9E+02	Z,UE-00	2.0E-00 2.2E+00
Endrin aldehyde	2.2E+00	5 15:102		2.2E+00 2.2E+00
Endrin ketone	2.2E+00	5.1E+02	1 6E 05	
gamma-BHC (Lindane)	2.0E-02	1.5E+03	1.6E-05	1.6E-05
gamma-Chlordane	5.8E-01	3.3E+01	4.00.00	5.8E-01
Heptachlor	4.0E-02	1.4E+00	4.0E-06	4.0E-06
Heptachlor epoxide	2.0E-02	2.6E+01	3.6E-06	3.6E-06
Methoxychlor	4.0E+00	6.3E+03	3.0E-05	3.0E-05
Toxaphene	3.0E-01	3.9E+02	2.0E-07	2.0E-07

TABLE 23 - GROUNDWATER EXTENT EVALUATION COMPARISON VALUES⁽¹⁾

	Potential Prelimi				
		RI/FS Work l		Extent Evaluation	
Chemicals of Interest	GWGWClass 3 (3)	AirGW _{Inh-V} ⁽⁴⁾	TCEQ Ecological Benchmark for Water ⁽⁵⁾	Comparison Value	
PCBs	5.0E-02	6.4E-01	3.0E-05	3.0E-05	
Aroclor-1016				NV	
Aroclor-1221				NV	
Aroclor-1232				NV	
Aroclor-1242				NV	
Aroclor-1248				NV	
Aroclor-1254				NV	
Aroclor-1260			+	NV	
VOCs					
1,1,1,2-Tetrachloroethane	7.9E+00	2.4E+01		7.9E+00	
1,1,1-Trichloroethane	2.0E+01	7.2E+03	1.6E+00	1.6E+00	
1,1,2,2-Tetrachloroethane	1.0E+00	9.6E+00	4.5E-01	4.5E-01	
1,1,2-Trichloroethane	5.0E-01	1.7E+01	2.8E-01	2.8E-01	
1,1-Dichloroethane	1.5E+03	1.3E+03		1.3E+03	
1,1-Dichloroethene	7.0E-01	3.0E+02	1.3E+01	7.0E-01	
1,1-Dichloropropene	2.0E+00	4.2E+00		2.0E+00	
1,2,3-Trichloropropane	2.9E-02	1.2E+03		2.9E-02	
1,2,4-Trichlorobenzene	7.0E+00	2.8E+03	2.2E-02	2.2E-02	
1,2,4-Trimethylbenzene	3.7E+02	3.4E+01	2.2E-01	2.2E-01	
1,2-Dibromo-3-chloropropane	2.0E-02	5.7E+00		2.0E-02	
1,2-Dibromoethane	5.0E-03	1.2E+00		5.0E-03	
1,2-Dichlorobenzene	6.0E+01	2.1E+02	9.9E-02	9.9E-02	
1,2-Dichloroethane	5.0E-01	7.2E+00	5.7E+00	5.0E-01	
1,2-Dichloroethene(Total)		_	6.8E-01	6.8E-01	
1,2-Dichloropropane	5.0E-01	2.1E+01	2.4E+00	5.0E-01	
1,3,5-Trimethylbenzene	3.7E+02	2.3E+01		2.3E+01	
1,3-Dichlorobenzene	2.2E+02	3.4E+01	1.4E-01	1.4E-01	
1,3-Dichloropropane	2.0E+00	5.5E+01		2.0E+00	
1.4-Dichlorobenzene	7.5E+00	4.7E+03	9.9E-02	9.9E-02	
2,2-Dichloropropane	3.0E+00	1.0E+01		3.0E+00	
2-Butanone	4.4E+03	4.9E+05		4.4E+03	
2-Chloroethylvinyl ether	1.9E-01	3.5E+00		1.9E-01	
2-Chlorotoluene	1.5E+02	1.4E+03		1.5E+02	
2-Hexanone	4.4E+02	2.8E+02		2.8E+02	
4-Chlorotoluene	5.1E+02	1.4E+00		1.4E+00	
4-Isopropyltoluene	7.3E+02	8.3E+02		7.3E+02	
4-Methyl-2-pentanone	5.8E+02	1.2E+05	6.2E+01	6.2E+01	
Acetone	6.6E+03	4.6E+04	2.8E+02	2.8E+02	
Acrolein	3.7E+00	1.3E+01	1.0E-02	1.0E-02	
Acrylonitrile	3.8E-01	1.3E+01	2.9E-01	2.9E-01	
Benzene	5.0E-01	3.9E+01	1.1E-01	1.1E-01	

TABLE 23 - GROUNDWATER EXTENT EVALUATION COMPARISON VALUES⁽¹⁾

	Potential Prelimi			
Chemicals of Interest	GWGWClass 3 (3)	Air GW _{Inh-V} (4)	TCEQ Ecological Benchmark for Water ⁽⁵⁾	Extent Evaluation Comparison Value
Bromobenzene	1.5E+02	6.8E+01		6.8E+01
Bromodichloromethane	3.3E+00			3.3E+00
Bromoform	2.6E+01	1.1E+03	1.2E+00	1.2E+00
Bromomethane	1.0E+01	8.3E+00	1.2E+00	1.2E+00
Butanol	7.3E+02	3.6E+04		7.3E+02
Carbon disulfide	7.3E+02	8.8E+02		7.3E+02
Carbon tetrachloride	5.0E-01	1.7E+00	1.5E+00	5.0E-01
Chlorobenzene	1.0E+01	2.1E+02	1.1E-01	1.1E-01
Chloroethane	2.9E+03	2.1E+04		2.9E+03
Chloroform	7.3E+01	4.3E+00	4.1E+00	4.1E+00
Chloromethane	1.6E+01	7.9E+00	1.4E+01	7.9E+00
cis-1.2-Dichloroethene	7.0E+00	2.9E+03		7.0E+00
cis-1,3-Dichloropropene	3.8E-01	4.2E+01		3.8E-01
Dibromochloromethane	2,4E+00			2.4E+00
Dibromomethane	2.7E+01	1.4E+02		2.7E+01
Dichlorodifluoromethane	1.5E+03	1.3E+02		1.3E+02
Ethylbenzene	7.0E+01	2.8E+03	2.5E-01	2.5E-01
Hexachlorobutadiene	2.6E+00	1.9E+00	3.2E-04	3.2E-04
Isopropylbenzene (Cumene)	7.3E+02	8.0E+02		7.3E+02
Methyl acetate	7.3E+03	2.4E+04		7.3E+03
Methyl iodide	1.0E+01	3.1E+01		1.0E+01
Methylcyclohexane	3.7E+04	2.6E+02		2,6E+02
Methylene chloride	5.0E-01	2.8E+02	5.4E+00	5.0E-01
Naphthalene	1.5E+02	5.7E+01	1.3E-01	1.3E-01
n-Butylbenzene	2.9E+02	6.6E+02		2.9E+02
n-Propylbenzene	2.9E+02	1.1E+03		2.9E+02
o-Xylene	1.0E+03	2.2E+04		1.0E+03
sec-Butylbenzene	2.9E+02	7.0E+02		2.9E+02
Styrene	1.0E+01	5.8E+03	4.6E-01	4.6E-01
tert-Butyl methyl ether (MTBE)	7.3E+01	8.8E+02		7.3E+01
tert-Butylbenzene	2.9E+02	4.5E+02		2,9E+02
Tetrachloroethene	5.0E-01	7.1E+01	1.5E+00	5.0E-01
Toluene	1.0E+02	1.4E+04	4,8E-01	4.8E-01
trans-1,2-Dichloroethene	1.0E+01	1.4E+02		1.0E+01
trans-1,3-Dichloropropene	2.0E+00	4.1E+01		2.0E+00
trans-1,4-Dichloro-2-butene		2.3E-01		2.3E-01
Trichloroethene	5.0E-01	3.5E+01	9.7E-01	5.0E-01
Trichlorofluoromethane	2.2E+03	7.4E+02		7.4E+02
Trichlorotrifluoroethane	2.2E+05	1.7E+03		1.7E+03
Vinvl acetate	7.3E+03	2.6E+03		2.6E+03
Vinyl chloride	2.0E-01	7.9E-01		2.0E-01
Xylene (total)	1.0E+03	3.0E+02	8.5E-01	8.5E-01

TABLE 23 - GROUNDWATER EXTENT EVALUATION COMPARISON VALUES⁽¹⁾

	Potential Prelimi	nary Screening Val RI/FS Work l	ues (PSVs) from Table 18 of	T
Chemicals of Interest	GWGW _{Class 3} (3)	AirGW _{Inh-V} ⁽⁴⁾	TCEQ Ecological Benchmark for Water ⁽⁵⁾	Extent Evaluation Comparison Value
SVOCs				
1,2Diphenylhydrazine/Azobenzen	1.9E+00	1.5E+02		1.9E+00
2,4,5-Trichlorophenol	7.3E+02	8.2E+04	1.2E-02	1.2E-02
2,4,6-Trichlorophenol	7.3E+00	1.1E+04	6.1E-02	6.1E-02
2,4-Dichlorophenol	2.2E+01	9.8E+04		2.2E+01
2,4-Dimethylphenol	1.5E+02	3.0E+04		1.5E+02
2,4-Dinitrophenol	1.5E+01		1.3E+00	1.3E+00
2,4-Dinitrotoluene	3.0E-01	2.2E+02		3.0E-01
2,6-Dinitrotoluene	3.0E-01	5.7E+02		3.0E-01
2-Chloronaphthalene	5.8E+02			5.8E+02
2-Chlorophenol	3.7E+01	1.1E+04	2.7E-01	2.7E-01
2-Methylnaphthalene	2.9E+01		3.0E-02	3.0E-02
2-Nitroaniline	2.2E+00	7.2E+02		2.2E+00
2-Nitrophenol	1.5E+01	1.2E+04	1.5E+00	1.5E+00
3,3'-Dichlorobenzidine	4.5E-01		3.7E-02	3.7E-02
3-Nitroaniline	2.2E+00	1.3E+04		2.2E+00
4,6-Dinitro-2-methylphenol	7.3E-01	1.5E+03		7.3E-01
4-Bromophenyl phenyl ether	1.4E-02	3.4E-01		1.4E-02
4-Chloro-3-methylphenol	3.7E+01	1.1E+05		3.7E+01
4-Chloroaniline	2.9E+01	1.2E+04		2.9E+01
4-Chlorophenyl phenyl ether	1.4E-02	2.7E-01		1.4E-02
4-Nitroaniline	5.4E+00	1.3E+04		5.4E+00
4-Nitrophenol	1.5E+01	4.3E+03	3.6E-01	3.6E-01
Acenaphthene	4.4E+02		4.0E-02	4.0E-02
Acenaphthylene	4.4E+02			4.4E+02
Acetophenone	7.3E+02	2.5E+04		7.3E+02
Aniline	3.6E+01	2.0E+03		3.6E+01
Anthracene	2.2E+03		1.8E-04	1.8E-04
Atrazine (Aatrex)	3.0E-01	3.3E+04		3.0E-01
Benzaldehyde	7.3E+02	9.4E+02		7.3E+02
Benzidine	8.9E-04	1.4E+00		8.9E-04
Benzo(a)anthracene	2.8E-01	4.4E+02		2.8E-01
Benzo(a)pyrene	2.0E-02	8.4E+01		2.0E-02
Benzo(b)fluoranthene	2.8E-01	3.5E+02		2.8E-01
Benzo(g,h,i)perylene	2.2E+02			2.2E+02
Benzo(k)fluoranthene	2.8E+00	2.1E+04		2.8E+00
Benzoic acid	2.9E+04	1.9E+04		1.9E+04
Benzyl alcohol	3.7E+03	1.7E+05		3.7E+03
Biphenyl	3,7E+02	3.7E+01		3.7E+01

TABLE 23 - GROUNDWATER EXTENT EVALUATION COMPARISON VALUES⁽¹⁾

	Potential Prelimi			
Chemicals of Interest	GW _{Class 3} (3)	AirGW _{Inh-V} ⁽⁴⁾	TCEQ Ecological Benchmark for Water ⁽⁵⁾	Extent Evaluation Comparison Value
Bis(2-Chloroethoxy)methane	1.9E-01	1.7E+01		1.9E-01
Bis(2-Chloroethyl)ether	1.9E-01	2.0E+01		1.9E-01
Bis(2-Chloroisopropyl)ether	2.9E+00	1.9E+02		2.9E+00
Bis(2-Ethylhexyl)phthalate	6.0E-01			6.0E-01
Butyl benzyl phthalate	1.5E+03	2.2E+04	1.5E-01	1.5E-01
Caprolactam	3.7E+03	4.4E+03		3.7E+03
Carbazole	1.0E+01			1.0E+01
Chrysene	2.8E+01	1.3E+05		2.8E+01
Dibenz(a,h)anthracene	2.8E-02	2.3E+02		2.8E-02
Dibenzofuran	2.9E+01		6.5E-02	6.5E-02
Diethyl phthalate	5.8E+03	2.5E+04	4.4E-01	4.4E-01
Dimethyl phthalate	5.8E+03	1.9E+04	5.8E-01	5.8E-01
Di-n-butyl phthalate	7.3E+02	1.3E+04	5.0E-03	5.0E-03
Di-n-octyl phthalate	1.5E+02	1.8E+03		1.5E+02
Fluoranthene	2.9E+02		3.0E-03	3.0E-03
Fluorene	2.9E+02		5.0E-02	5.0E-02
Hexachlorobenzene	1.0E-01	1.2E+00		1.0E-01
Hexachlorocyclopentadiene	5.0E+00	9.8E-01	7.0E-05	7.0E-05
Hexachloroethane	7.3E+00	3.1E+02	9.4E-03	9.4E-03
Indeno(1,2,3-cd)pyrene	2,8E-01	2.0E+03		2.8E-01
Isophorone	2.2E+02	1.9E+04	6.5E-01	6.5E-01
Nitrobenzene	3.7E+00	1.1E+03	6.7E-02	6.7E-02
n-Nitrosodimethylamine	4.0E-03	4.4E+00	1.7E+02	4.0E-03
n-Nitrosodi-n-propylamine	2.9E-02		1.2E-01	2,9E-02
n-Nitrosodiphenylamine	4.2E+01		1.7E+02	4.2E+01
o-Cresol	3.7E+02	1.8E+04	5.1E-01	5.1E-01
Pentachlorophenol	1.0E-01	2.4E+03	9.6E-03	9.6E-03
Phenanthrene	2.2E+02		4.6E-03	4.6E-03
Phenol	2,2E+03	5.0E+04	2.8E+00	2.8E+00
Pyrene	2.2E+02		2.4E-04	2.4E-04
Pyridine	7.3E+00	4.0E+01		7.3E+00
Sulfate				NV
Chloride				NV
Total Dissolved Solids(TDS)				NV
Total Suspended Solids				NV
Total Organic Carbon				NV
Hardness				NV

- 1. All values in mg/L.
- 2. Values from Table 18 of RI/FS Work Plan (updated to reflect changes from 2005 where applicable).
- 3. GWGW_{CLass3} PCL = TCEQ Protective Concentration Level for Class 3 groundwater, commerical/industrial land use. April 2008.
- 4. Air GW_{Inh-V}PCL = TCEQ Protective Concentration Level for inhalation of constituents in groundwater, 30 acre source area, commercial/industrial land use. April 2008.
- 5. From Table 3-2 (Ecological Benchmarks for Water) of TCEQ "Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas." Metals benchmarks are for dissolved concentrations, except for barium, mercury, selenium, and thallium.
- 6. NV = No Preliminary Screening Value.

Sample Location	Sample Date	Chemical of Interest	Concentration (mg/L)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/L)
<u> </u>		Chromium	0.14J	0.1
]	Endosulfan II	0.000021J	0.000009
NB4PZ01	8/3/2006	Nickel	0.14J	0.013
		Silver	0.0088J	0.00019
		Chromium	0.16	0.1
NC3PZ02	8/2/2006	Silver	0.017J	0.00019
		Benzene	0.657	0.11
		Endosulfan II	0.0000103J	0.000009
ND1PZ03	8/1-2/2006	Silver	0.0099J	0.00019
	j l	Vinyl chloride	1.22	0.2
		1,1,1-Trichloroethane	15.4	1.6
		1,1-Dichloroethene	23.5	0.7
		1,2,3-Trichloropropane	25.5J-	0.029
		1,2-Dichloroethane	58.8	0.5
		1,2-Dichloropropane	3.45J	0.5
		4,4'-DDE	0.00027	0.00014
		Benzene	5.39J	0.11
	8/3/2006	Chromium	0.15J	0.1
		cis-1,2-Dichloroethene	13.4	7
		Dieldrin	0.0000264J	0.000002
		gamma-BHC (Lindane)	0.00016Ј	0.000016
	1	Methylene chloride	300	0.5
,		Silver	0.012J	0.00019
		Tetrachloroethene	20.5	0.5
ND2MW01		Trichloroethene	84	0.5
		1,1-Dichloroethene	2.92	0.7
	ļ	1,2-Dichloroethene(Total)	19.2	0.68
	11/8/2007	Benzene	0.518J	0.11
		cis-1,2-Dichloroethene	19.2	7
		Vinyl chloride	0.331J	0.2
		1,1-Dichloroethene	2.35	0.7
		1,2,3-Trichloropropane	0.374J	0.029
	1	1,2-Dichloroethane	1.25	0.5
	(40,000	1,2-Dichloroethene(Total)	12.5	0.68
	6/18/2008	Benzene	0.375J	0.11
	1 .	cis-1,2-Dichloroethene	12.5	7
		Methylene chloride	2.88	0.5
-		Vinyl chloride	0.978J	0.2

	Sample			Extent Evaluation Comparison
Sample Location	Date	Chemical of Interest	Concentration (mg/L)	Value ⁽¹⁾ (mg/L)
		1,1,1-Trichloroethane	2.25	1.6
		1,2,3-Trichloropropane	0.497J-	0.029
		Anthracene	0.000832J	0.00018
•	8/3/2006	Chromium	0.15J	0.1
	8/3/2000	gamma-BHC (Lindane)	0.00019Ј	0.000016
	1	Silver	0.0063J	0.00019
		Tetrachloroethene	1.92	0.5
		Trichloroethene	6.04	0.5
		1,1,1-Trichloroethane	14	1.6
	1	1,2,3-Trichloropropane	1.57	0.029
		1,2-Dichloroethene(Total)	9.37	0.68
ND3MW02	11/8/2007	Benzene	0.158J	0.11
	!	cis-1,2-Dichloroethene	9.37	7
		Tetrachloroethene	2.1	0.5
		Trichloroethene	17.7	0.5
		1,1,1-Trichloroethane	42	1.6
		1,1-Dichloroethene	0.975J	0.7
	6/18/2008	1,2,3-Trichloropropane	3.86Ј	0.029
		1,2-Dichloroethene(Total)	13.6	0.68
		cis-1,2-Dichloroethene	13.6	7
		Tetrachloroethene	34.8	0.5
		Toluene	0.691J	0.48
		Trichloroethene	76	0.5
		1,1,1-Trichloroethane	156	1.6
		1,2,3-Trichloropropane	44.3J	0.029
		1,2-Dichloroethane	328	0.5
	6/5/2007	Endosulfan II	0.00012J	0.00009
	0/3/2007	gamma-BHC (Lindane)	0.00123	0.000016
		Methylene chloride	1230	0.5
		Trichloroethene	61.2J	0.5
		1,1,1-Trichloroethane	195	1.6
		1,1-Dichloroethene	22J	0.7
		1,2,3-Trichloropropane	53.1J	0.029
	11/8/2007	1,2-Dichloroethane	292	0.5
ND3MW29		Methylene chloride	1100	0.5
NDSIVI W 27		Trichloroethene	69.4J	
		1,1,1-Trichloroethane	234	0.5
		1,1-Dichloroethene	21.3J	
		-	44.4J	0.7
		1,2,3-Trichloropropane	1	0.029
		1,2-Dichloroethane	347	0.5
	6/18/2008	1,2-Dichloroethene(Total)	24.5J	0.68
		Benzene	5.92J	0.11
		cis-1,2-Dichloroethene	24.5J	. 7
		Methylene chloride	1100	0.5
		Tetrachloroethene	12.9J	0.5
		Trichloroethene	135	0.5

	Sample			Extent Evaluation Comparison
Sample Location	Date	Chemical of Interest	Concentration (mg/L)	Value ⁽¹⁾ (mg/L)
	Ţ	1,1,1-Trichloroethane	62.7	1.6
	1	1,1-Dichloroethene	29.2	0.7
	}	1,2,3-Trichloropropane	28.2	0.029
	1 1	1,2-Dichloropropane	3.36J	0.5
		Benzene	8.24J	0.11
	-	Carbon tetrachloride	7.58J	0.5
ND3PZ04	7/31/2006	cis-1,2-Dichloroethene	124	7
		Heptachlor epoxide	0.000025	0.000036
		Silver	0.005J	0.00019
		Tetrachloroethene	7.86J	0.5
		Toluene	4.05J	0.48
	1	Trichloroethene	31.7	0.5
	1	Vinyl chloride	5.09J	0.2
ND4MW03	8/2/2006	Silver	0.013	0.00019
		Chromium	0.11J	0.1
NE1MW04	8/3/2006	Endosulfan II	0.0000138J	0.00009
		Silver	0.014J	0.00019
		Anthracene	0.00138J	0.00018
		Ethylbenzene	0.74	0.25
	8/2/2006	Naphthalene	0.322	0.13
NTCON CIVIOS		Phenanthrene	0.00638	0.0046
NE3MW05		Pyrene	0.000517J	0.00024
		Silver	0.001J	0.00019
	11/7/2007	Ethylbenzene	0.273	0.25
		Naphthalene	0.243	0.13
		Chromium	0.13J	0.11
NF1PZ05	8/3/2006	Endosulfan II	0.0000148J	0.000009
	!	Silver	0.0085J	0.00019
		1,2,3-Trichloropropane	0.214	0.029
		Endosulfan sulfate	0.0000156J	0.000009
NF2MW06	8/3/2006	Methylene chloride	0.944	0.5
•		Silver	0.0032J	0.00019
·		Trichloroethene	0.506	0.5
NF3PZ06	8/1/2006	Nickel	0.084	0.013
NESEZUO	6/1/2000	Silver	0.011J	0.00019
· · · · · · · · · · · · · · · · · · ·		Chromium	0.14J	0.1
SA4PZ07	8/3/2006	Endosulfan II	0.0000309J	0.000009
SA4FLU/	8/3/2000	Nickel	0.022J	0.013
		Silver	0.016J	0.00019
SB4MW07	8/1/2006	Silver	0.03J	0.00019

Sample Location	Sample Date	Chemical of Interest	Concentration (mg/L)	Extent Evaluation Comparison Value ⁽¹⁾ (mg/L)
SD3PZ08	7/31/2006	Chromium	0.15	0.1
3D31 200	7/31/2000	Silver	0.012J	0.00019
SE1MW08	8/2/2006	Silver	0.011	0.00019
SE6MW09	7/31/2006	Silver	0.0024J	0.00019
SF5MW10	8/1/2006	gamma-BHC (Lindane)	0.000024J	0.000016
2L2MM 10	6/4/2007	gamma-BHC (Lindane)	0.000042J	0.000016
SF6MW11	7/31/2006	Silver	0.0099J	0.00019
SF7MW12	7/31/2006	Silver	0.0044J	0.00019
SG2MW13	8/1/2006	Silver	0.015J	0.00019
SH7MW14	7/31/2006	Silver	0.0028J	0.00019
		Endosulfan sulfate	0.000104	0.000009
SJ1MW15	8/2/2006	Heptachlor epoxide	0.0000201J	0.000036
		Silver	0.0088	0.00019
SJ7MW16	7/31/2006	Silver	0.0048J	0.00019
SL8MW17	8/3/2006	Silver	0.028J	0.00019

- (1) Extent Evaluation Comparison Values from Table 23.
- (2) Data qualifiers: J = estimated value. J- = estimated value, biased low.

TABLE 25 - VERTICAL GRADIENT MEASUREMENTS

Well ID	Date	MP ¹ Elevation (ft AMSL ²)	Depth to Water (ft BMP ³)	Water Elevation (ft AMSL)	Vertical Gradient ⁴ - Zone A to B	Vertical Gradient ⁴ - Zone B to C
	6/6/2007	6.20	4.42	1.78		
	9/6/2007	6.20	3.84	2.36		P. Sept.
ND4MW03	11/7/2007	6.20	4.47	1.73		
	12/3/2007	6.20	3.73	2.47		
	6/17/2008	6.20	6.31	-0.11	55 of L 2 M	
	6/6/2007	5.70	3.81	1.89		10.00
	9/6/2007	5.70	3.41	2.29		
ND4MW24B	11/7/2007	5.70	3.78	1.92		
	12/3/2007	5.70	3.32	2.38		
	6/17/2008	5.70	5.48	0.22		200
	6/6/2007				-0.03	
Vertical	9/6/2007				0.02	
gradients for	11/7/2007		1444		-0.05	
well cluster	12/3/2007		11064		0.02	
	6/17/2008		11000		-0.08	
	6/6/2007	5.08	3.58	1.50		2.4
	9/6/2007	5.08	3.29	1.79		
NG3MW19	11/7/2007	5.08	3.77	1.31	SERVICE PROPERTY.	
	12/3/2007	5.08	3.29	1.79		
	6/17/2008	5.08	4.38	0.70		
	6/6/2007	4.91	3.17	1.74	4.0	
	9/6/2007	4.91	3.01	1.90		
NG3MW25B	11/7/2007	4.91	3.15	1.76		
NG3MW23B	12/3/2007	4.91	2.94	1.97		
	6/17/2008	4.91	3.69	1.22		
	7/30/2008	4.91	3.26	1.65		
	6/9/2008	5.79	9.82	4.03		1.5
NG3CPT1	6/17/2008	5.79	9.47	-3.68		
	7/30/2008	5.79	9.41	-3.62		
	6/6/2007	100		1	-0.07	
Vertical	9/6/2007				-0.03	
gradients for	11/7/2007				-0.13	
well cluster	12/3/2007				-0.05	
wen cluster	6/17/2008	10.45	10112		-0.15	0.14
	7/30/2008		100			0.15

TABLE 25 - VERTICAL GRADIENT MEASUREMENTS

Well ID	Date	MP ¹ Elevation (ft AMSL ²)	Depth to Water (ft BMP ³)	Water Elevation (ft AMSL)	Vertical Gradient ⁴ - Zone A to B	Vertical Gradient ⁴ - Zone B to C
	6/6/2007	5.73	4.17	1.56		
	9/6/2007	5.73	3.96	1.77		
OMW21	11/7/2007	5.73	5.07	0.66		
	12/3/2007	5.73	4.86	0.87		
	6/17/2008	5.73	6.12	-0.39	12 18 18 18 18	
	6/6/2007	5.45	3.26	2.19	2 3 44	
	9/6/2007	5.45	3.04	2.41	1.164	
OMW27B	11/7/2007	5.45	4.34	1.11		1825
OMW2/B	12/3/2007	5.45	4.17	1.28		
	6/17/2008	5.45	5.47	-0.02		
	7/30/2008	5.45	4.27	1.18		
	6/9/2008	6.38	12.25	5.87		
OCPT4	6/17/2008	6.38	12.46	-6.08		
	7/30/2008	6.38	12.93	-6.55		
	6/6/2007				-0.10	
Vertical	9/6/2007				-0.10	
gradient for	11/7/2007				-0.07	
well cluster	12/3/2007				-0.06	
Well cluster	6/17/2008				-0.06	0.17
	7/30/2008					0.21
NE4MW31B	6/17/2008	6.01	5.04	0.97		
INCAM MOID	7/30/2008	6.01	4.59	1.42		
NE4CPT2	6/17/2008	6.77	10.32	-3.55		14.00
	7/30/2008	6.77	10.31	-3.54		
Vertical gradient for	6/17/2008					0.13
well cluster	7/30/2008	100			<u> </u>	0.14

¹ MP = Measurement Point (Top of PVC well casing).

² AMSL = Above Mean Sea Level (NGVD 29).

³ BMP = Below Measurement Point.

⁴Vertical gradient calculated using vertical distance from base of screened interval in upper unit monitoring well to top of screened interval in lower unit monitoring well at well cluster location. A positive value indicates a downward gradient. A negative value indicates an upward gradient.

TABLE 26 - ZONE B GROUNDWATER CONCENTRATIONS

Sample Location	Sample Date	Chemical of Interest	Concentration (mg/L)	Extent Evaluation Comparison Value (mg/L) ¹
		1,1,1-Trichloroethane	<0.000155	1.6
		1,1-Dichloroethene	<0.000226	0.7
		1,2,3-Trichloropropane	<0.000151	0.029
		1,2-Dichloroethane	0.00157J	0.5
		1,2-Dichloropropane	<0.0001	0.5
		4,4'-DDE	<0.00000195	0.6
		Anthracene	<0.000102	2,200
		Benzene	<0.000184	0.5
		Carbon tetrachloride	<0.000124	0.5
		cis-1,2-Dichloroethene	0.00431J	7
		Dieldrin	<0.00000425	0.013
		Endosulfan II	<0.000018	44
		Endosulfan sulfate	<0.000016	44
ND4MW24B	6/5/2007	Ethylbenzene	<0.000077	70
		gamma-BHC (Lindane)	<0.00000125	0.02
		Heptachlor epoxide	<0.000002	0.02
		Methylene chloride	0.00437J	0.5
		Naphthalene	<0.000053	57
		Nickel	<0.0009	15
		Phenanthrene	<0.000137	220
		Pyrene	<0.00009	220
		Tetrachloroethene	0.000881J	0.5
		Thallium	<0.0038	0.2
		Toluene	<0.000093	100
		Trichloroethene	0.00203J	0.5
		Vinyl chloride	<0.000163	0.2
		1,1,1-Trichloroethane	64	1.6
		1,1-Dichloroethene	10.2J	0.7
		1,2,3-Trichloropropane	45.7	0.029
		1,2-Dichloroethane	176	0.5
		1,2-Dichloropropane	<0.499	0.5
		Anthracene	<0.000104	2,200
		Benzene	<0.921	0.5
		Carbon tetrachloride	<0.621	0.5
		cis-1,2-Dichloroethene	<0.768	7
		Ethylbenzene	<0.387	70
NE3MW30B	12/3/2007	Methylene chloride	738	0.5
	·	Naphthalene	<1.84	57
	ļ	Nickel	<0.00084	15
		Phenanthrene	0.00576	220
		Pyrene	<0.000092	220
		Tetrachloroethene	23.8J	0.5
		Thallium	<0.0038	0.2
		Toluene	<0.466	100
		Trichloroethene	170	0.5
		Vinyl chloride	<0.817	0.2

TABLE 26 - ZONE B GROUNDWATER CONCENTRATIONS

Sample Location	Sample Date	Chemical of Interest	Concentration (mg/L)	Extent Evaluation Comparison Value (mg/L) ¹
		1,1,1-Trichloroethane	<0.000155	1.6
		1,1-Dichloroethene	<0.000226	0.7
		1,2,3-Trichloropropane	<0.000151	0.029
		1,2-Dichloroethane	<0.000184	0.5
		Benzene	<0.000184	0.5
NE4MW31B	6/18/2008	Carbon tetrachloride	<0.000124	0.5
		cis-1,2-Dichloroethene	0.000423J	7
1		Methylene chloride	0.00218J	0.5
		Tetrachloroethene	<0.000081	0.5
		Trichloroethene	<0.000123	. 0.5
		Vinyl chloride	<0.000163	0.2
		1,1,1-Trichloroethane	<0.000155	1.6
		1,1-Dichloroethene	<0.000226	0.7
		1,2,3-Trichloropropane	<0.000151	0.029
		1,2-Dichloroethane	<0.000184	0.5
		1,2-Dichloropropane	<0.0001	0.5
		4,4'-DDE	<0.0000195	0.6
		Anthracene	<0.000102	2200
		Benzene	<0.000184	0.5
		Carbon tetrachloride	<0.000124	0.5
		cis-1,2-Dichloroethene	<0.000154	7
		Dieldrin	<0.00000425	0.013
		Endosulfan II	<0.0000018	44
3 (CO) (WIO CD	C1C10007	Endosulfan sulfate	<0.000016	44
NG3MW25B	6/6/2007	Ethylbenzene	<0.000077	70
:		gamma-BHC (Lindane)	<0.0000125	0.02
		Heptachlor epoxide	<0.000002	0.02
		Methylene chloride	< 0.000675	0.5
		Naphthalene	<0.000053	57
		Nickel	<0.0009	15
		Phenanthrene	< 0.000137	220
		Pyrene	<0.00009	220
		Tetrachloroethene	<0.000081	0.5
		Thallium	<0.0038	0.2
		Toluene	<0.000093	100
		Trichloroethene	<0.000123	0.5
		Vinyl chloride	<0.000163	0.2

TABLE 26 - ZONE B GROUNDWATER CONCENTRATIONS

Sample Location	Sample Date	Chemical of Interest	Concentration (mg/L)	Extent Evaluation Comparison Value (mg/L) ¹
		1,1,1-Trichloroethane	<0.000155	1.6
		1,1-Dichloroethene	<0.000226	0.7
		1,2,3-Trichloropropane	<0.000151	0.029
		1,2-Dichloroethane	<0.000184	0.5
		1,2-Dichloropropane	<0.0001	0.5
		4,4'-DDE	<0.00000195	0.6
		Anthracene	<0.000102	2200
		Benzene	<0.000184	0.5
	6/4/2007	Carbon tetrachloride	<0.000124	0.5
		cis-1,2-Dichloroethene	<0.000154	7
		Dieldrin	<0.00000425	0.013
		Endosulfan II	<0.0000018	44
OMW27B		Endosulfan sulfate	<0.0000016	44
OWIW27B		Ethylbenzene	<0.00077	70
		gamma-BHC (Lindane)	<0.00000125	0.02
		Heptachlor epoxide	<0.000002	0.02
		Methylene chloride	<0.000774	0.5
		Naphthalene	<0.000053	57
		Nickel	<0.00045	15
		Phenanthrene	<0.000137	220
		Pyrene	<0.00009	220
		Tetrachloroethene	<0.000081	0.5
		Thallium	<0.0019	0.2
		Toluene	<0.000093	100
		Trichloroethene	<0.000123	0.5
		Vinyl chloride	<0.000163	0.2

⁽¹⁾ Extent Evaluation Comparison Values from Table 23 (human health PSVs only).

⁽²⁾ Data qualifiers: J = estimated value.

⁽³⁾ Bolded values and detection limits exceed extent evaluation comparison value.

TABLE 27 - LABORATORY VERTICAL HYDRAULIC CONDUCTIVITY TESTING RESULTS

Sample Location	Sample Depth (ft below ground surface)	Vertical Hydraulic Conductivity (cm/sec)
NE4MW32C	53-55	6.55 x 10 ⁻⁹
NE4MW32C	55-57	5.66 x 10 ⁻⁹
SE1DB01	. 80-82	1.64 x 10 ⁻⁸

TABLE 28 - ZONE C GROUNDWATER CONCENTRATIONS

Sample Location	Sample Date	Chemical of Interest	Concentration (mg/L)	Extent Evaluation Comparison Value (mg/L) ¹
		1,1,1-Trichloroethane	0.709	20
		1,1-Dichloroethene	<0.000226	0.7
		1,2,3-Trichloropropane	0.321	0.029
		1,2-Dichloroethane	<0.000184	0.5
		Benzene	0.0459J	0.5
	6/18/2008	Carbon tetrachloride	<0.000124	0.5
		cis-1,2-Dichloroethene	4.62	7
		Methylene chloride	<0.000104	0,5
		Tetrachloroethene	1.35	0.5
		Trichloroethene	1.89	0.5
		Vinyl chloride	<0.000163	0.2
		1,1,1-Trichloroethane	0.18	20
		1,1-Dichloroethene	0.0379	0.7
	1	1,2,3-Trichloropropane	0.219	0.029
	}	1,2-Dichloroethane	<0.0018	0.5
		Benzene	0.0548	0.5
	7/31/2008	Carbon tetrachloride	<0.00312	0.5
	//31/2006	cis-1,2-Dichloroethene	3.27	7
		1 ,	<0.00192	0.5
•		Methylene chloride	<0.00192	0.5
		Tetrachloroethene		0.5
		Trichloroethene	<0.00236	
NE4MW32C		Vinyl chloride	<0.00310	0.2 20
		1,1,1-Trichloroethane	<0.00096	
		1,1-Dichloroethene	0.00177J	0.7
		1,2,3-Trichloropropane	0.0119	0.029
		1,2-Dichloroethane	<0.00009	0.5
		Benzene	0.0012J	0.5
	9/30/2008	Carbon tetrachloride	<0.000156	0.5
		cis-1,2-Dichloroethene	0.168	7
		Methylene chloride	<0.000096	0.5
		Tetrachloroethene	0.00648	0.5
		Trichloroethene	0.00639	0.5
		Vinyl chloride	< 0.000155	0.2
		1,1,1-Trichloroethane	<0.00096	20
		1,1-Dichloroethene	0.00143J	0.7
		1,2,3-Trichloropropane	0.0042J	0.029
		1,2-Dichloroethane	<0.00009	0.5
		Benzene	0.00141J	0.5
	1/13/2009	Carbon tetrachloride	<0.000156	0,5
		cis-1,2-Dichloroethene	0.112	7
		Methylene chloride	<0.000096	0.5
		Tetrachloroethene	<0.000153	0.5
		Trichloroethene	0.0341	0,5
		Vinyl chloride	<0.000155	0.2
-		1,1,1-Trichloroethane	<0.000096	20
	1	1,1-Dichloroethene	<0.000201	0.7
		1,2,3-Trichloropropane	<0.000291	0.029
		1,2-Dichloroethane	<0.00090	0.5
		Benzene	<0.000050	0.5
NG3CPT1	7/31/2008	Carbon tetrachloride	<0.000156	0.5
HOJCF I I	//31/2008	cis-1,2-Dichloroethene	<0.000136	7
		1 -	<0.000162	0.5
		Methylene chloride	<0.000096	
		Tetrachloroethene		0.5
		Trichloroethene	<0.000118	0.5
	I	Vinyl chloride	<0.000155	0.2

TABLE 28 - ZONE C GROUNDWATER CONCENTRATIONS

Sample Location	Sample Date	Chemical of Interest	Concentration (mg/L)	Extent Evaluation Comparison Value (mg/L) ¹
		1,1,1-Trichloroethane	<0.000096	20
		1,1-Dichloroethene	< 0.000201	0.7
		1,2,3-Trichloropropane	<0.000091	0.029
		1,2-Dichloroethane	<0.000090	0.5
		Benzene	<0.000065	0.5
NE4CPT2	7/31/2008	Carbon tetrachloride	<0.000156	0.5
		cis-1,2-Dichloroethene	<0.000162	7
		Methylene chloride	<0.000096	0.5
		Tetrachloroethene	< 0.000153	0.5
		Trichloroethene	<0.000118	0.5
		Vinyl chloride	< 0.000155	0.2
		1,1,1-Trichloroethane	<0.000096	20
		1,1-Dichloroethene	<0.000201	0.7
		1,2,3-Trichloropropane	<0.000091	0.029
		1,2-Dichloroethane	<0.000090	0.5
		Benzene	<0.000065	0.5
NC2CPT3	7/31/2008	Carbon tetrachloride	<0.000156	0.5
		cis-1,2-Dichloroethene	<0.000162	7
		Methylene chloride	<0.000096	0.5
		Tetrachloroethene	<0.000153	0.5
		Trichloroethene	<0.000118	0.5
		Vinyl chloride	<0.000155	0.2
		1,1,1-Trichloroethane	<0.000096	20
		1,1-Dichloroethene	<0.000201	0.7
		1,2,3-Trichloropropane	<0.000091	0.029
		1,2-Dichloroethane	<0.000090	0.5
		Benzene	<0.000065	0.5
OCPT4	7/31/2008	Carbon tetrachloride	<0.000156	0.5
		cis-1,2-Dichloroethene	<0.000162	7
		Methylene chloride	<0.000096	0.5
		Tetrachloroethene	<0.000153	0.5
		Trichloroethene	<0.000118	0.5
		Vinyl chloride	<0.000155	0.2
		1,1,1-Trichloroethane	<0.000096	20
		1,1-Dichloroethene	<0.000201	0.7
		1,2,3-Trichloropropane	<0.000091	0.029
		1,2-Dichloroethane	<0.000090	0.5
		Benzene	<0.000065	0.5
OCPT5	1/13/2009	Carbon tetrachloride	<0.000156	0.5
		cis-1,2-Dichloroethene	<0.000162	7
		Methylene chloride	<0.000096	0.5
		Tetrachloroethene	<0.000153	0.5
		Trichloroethene	<0.000118	0.5
		Vinyl chloride	<0.000155	0.2

⁽¹⁾ Extent Evaluation Comparison Values from Table 23 (human health PSVs only).

 ⁽²⁾ Data qualifiers: J = estimated value.
 (3) Bolded values exceed extent evaluation comparison value.

APPENDIX B

INTRACOASTAL WATERWAY SEDIMENT BACKGROUND CONCENTRATION TOLERANCE LIMIT CALCULATIONS

APPENDIX B

INTRACOASTAL WATERWAY SEDIMENT BACKGROUND CONCENTRATION TOLERANCE LIMIT CALCULATIONS

Tolerance limits were calculated for background metals analytes using the procedure described in Gibbons, 1994. Relevant pages from Gibbons, 1994 describing this procedure are attached. A step-by-step discussion of these calculations is provided below.

Step 1 - Calculate the Background Mean and Standard Deviation

After confirming the data were normally distributed, these parameters were calculated for each background metal using EPA's *PRO UCL* statistical software package (EPA, 2007). These parameters are summarized in Table B-1.

Step 2- Calculate Tolerance Limit

Since the purpose of the tolerance limit is to identify metals concentrations that are higher than background a one-sided upper tolerance limit was calculated.

As provided in Gibbons, the tolerance limit is calculated from:

TL = mean + K * (std. deviation)

Where K is a factor determined from statistical tables based on the number of samples in the background data set and the desired confidence and coverage goals. Consistent with Gibbons, 1994, a 95% confidence level with 95% coverage was used. Based on a background data set of 9 samples and these goals, and using Table 4.2 of Gibbons (attached), K was set at 3.032 for all background data sets. The resultant upper tolerance limits are listed in Table B-1.

TABLE B-1 - BACKGROUND SAMPLE STATISTICS - INTRACOASTAL WATERWAY SEDIMENT

	Site-Specific Background Values (mg/kg)				
Compound	Mean	Std. Dev.	Upper Tolerance Limit ⁽¹⁾		
A 1	10 012	6,892	33,110		
Aluminum	12,213	•	•		
Antimony	4.02	2.83	12.6		
Arsenic	5.81	3.11	15.2		
Barium	210	48	354		
Beryllium	0.766	0.403	1.99		
Boron	27.6	12.8	66.5		
Chromium	12.8	6.5	32.6		
Cobalt	6.70	3.17	16.3		
Copper	8.14	5.2	23.8		
Lead	9.58	3.6	20.5		
Lithium	21.4	14.4	65.1		
Manganese	331	89	601		
Mercury	0.018	0.013	0.0576		
Molybdenum	0.24	0.07	0.446		
Nickel	14.91	8.11	39.5		
Strontium	59.2	22.1	126		
Titanium	31.8	10.5	63.6		
Vanadium	20.2	9.1	47.9		
Zinc (3)	36.04	13.68	77.5		

Note:

(1) One-side upper tolerance limit for 95% confidence and 95% coverage for a background data set of 9 samples.

Attachment B-1

Excerpted Pages from Gibbons, 1994

STATISTICAL METHODS FOR GROUNDWATER MONITORING

Robert D. Gibbons

University of Illinois at Chicago



A WILEY-INTERSCIENCE PUBLICATION

JOHN WILEY & SONS, INC.

New York

Chichester

Brisbane

Toronto

Singapore

allowable, the costly verification stage would not be required. This two-stage procedure is quite similar to the prediction limit approach described by Davis and McNichols (1987).

4.2 NORMAL TOLERANCE LIMITS

Assume that we have available estimates \bar{x} and s of the mean and standard deviation based on n background observations with degrees of freedom f = n - 1 from a normal distribution. We require the factor K from the two-sided interval

$$\bar{x} \pm Ks$$
 (4.1)

which leads to the statement, "At least a proportion P of the normal population is between $\bar{x} - Ks$ and $\bar{x} + Ks$ with confidence $1 - \alpha$." Wald and Wolfowitz (1946) showed that K can be approximated by

$$K \sim ru$$
 (4.2)

where r is a function of n and P and is determined from the normal distribution

$$\frac{1}{\sqrt{2\pi}} \int_{(1/\sqrt{n})-r}^{(1/\sqrt{n})+r} \exp\left(\frac{-x^2}{2}\right) dx = P \tag{4.3}$$

and u is a function of f and α and is defined as the $(1 - \alpha)100\%$ of the chi-square distribution as

$$\dot{u} = \sqrt{\frac{f}{\chi_{\alpha,f}^2}} \tag{4.4}$$

By selecting a coverage probability P, (4.3) may be solved for r (since n is known), and by selecting a confidence level P, (4.4) may be solved for u (since f = n - 1 is known). Two-sided values of K are provided in Table 4.1 for n = 4 to ∞ , 95% confidence and 95% and 99% coverage.

For one-sided tolerance limits $\bar{x} + Ks$, we require the factor K which leads to the statement, "At least a proportion P of the normal population is less than $\bar{x} + Ks$ with confidence $1 - \alpha$." Owen (1962) determines K by

$$\Pr\{(\text{noncentral } t \text{ with } \delta = z\sqrt{n}) \le K\sqrt{n}\} = 1 - \alpha$$
 (4.5)

where δ is the noncentrality parameter of the noncentral t-distribution with

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TABLE 4.1 Factors (K) for Constructing Two-Sided Normal Tolerance Limits ($\bar{x} \pm Ks$) for 95% Confidence and 95% and 99% Coverage

n	95% Coverage	99% Coverage
4	6.370	8.299
5	5.079	6.634
6	4.414	5.775
7	4.007	5.248
8	3.732	. 4.891
9	3.532	4.631
10	3.379	4.433
11 .	3.259	4.277
12	3.169	4.150
13	3.081	4.044
14	3.012	3.955
15	2.954	3.878
16	2.903	3.812
17	2.858	3.754
18	2.819	3.702
19	2.784	3.656
20	2.752	3.615
21	2.723	3.577
22	2.697	3.543
23	2.673	3.512
24	2.651	3.483
25	2.631	3.457
30	2.549	3.350
35	2.490	3.272
40	2.445	3.212
50	2.379	3.126
60	2.333	3.066
80	2.272	2.986
100	2.233	2.934
500	2.070	2.721
∞	1.960	2.576

f = n - 1 degrees of freedom, and z is defined by

$$\frac{1}{\sqrt{2\pi}} \int_{-\infty}^{z} \exp\left(\frac{-x^2}{2}\right) dx = P \tag{4.6}$$

One-sided values of K are provided in Table 4.2 for n=4 to ∞ , 95% confidence and 95% and 99% coverage.

To illustrate the differences between tolerance and prediction limits, Figure 4.1 displays power curves for a 95% confidence normal prediction

limit for the n = 20, and a limit and 95% Figure 4.1 r comparisons have expecte limit that is 95% confide tion monitor

N a

TABLE 4.2 Factors (K) for Constructing One-Sided Normal Tolerance Limits ($\bar{x} + Ks$) for 95% Confidence and 95% and 99% Coverage

n	95% Coverage	99% Coverage
4	5.144	7.042
5	4.210	5.749
6	3.711	5.065
7	3.401	4.643
8	3.188	4.355
9	3.032	4.144
10	2.911	3.981
11	2.815	3.852
12	2.736	3.747
13	2.670	3.659
14	2.614	3.585
15	2.566	3.520
16	2.523	3.463
17	2.486	3.414
18	2:453	3.370
19	2.423	3.331
20	2.396	3.295
21	2.371	3,262
22	2.350	3.233
23	2.329	3.206
24	2.309	3.181
25	2.292	3.158
30	2.220	3.064
35	2.166	2.994
40	2.126	2.941
50	. 2.065	2.863
60	2.022	2.807
80 ,	1.965	2.733
100	1.927	2.684
500	1.763	2.475
œ	1.645	2.326

(4.6)

= 4 to ∞ , 95%

rediction limits,

limit for the next k=100 measurements based on a previous sample of n=20, and a corresponding 95% confidence 95% coverage normal tolerance limit and 95% confidence 99% coverage normal tolerance limit. Inspection of Figure 4.1 reveals that the probability of failing at least one of the 100 comparisons by chance alone is much greater for the tolerance limits which have expected failure rates of 1% and 5%, respectively, versus the prediction limit that is designed to include 100% of the next 100 measurements with 95% confidence. Use of these two alternative limits for groundwater detection monitoring is anything but a "matter of personal preference."

APPENDIX C

SOIL BACKGROUND CONCENTRATION TOLERANCE LIMIT CALCULATIONS

APPENDIX C

SOIL BACKGROUND CONCENTRATION TOLERANCE LIMIT CALCULATIONS

Tolerance limits were calculated for background metals analytes using the procedure described in Gibbons, 1994, and used for background Intracoastal Waterway sediments in Appendix B. A step-by-step discussion of these calculations is provided below.

Step 1 - Calculate the Background Mean and Standard Deviation

These parameters were calculated for each background metal using EPA's *PRO UCL* statistical software package (EPA, 2007). These parameters are summarized in Table C-1.

Step 2- Calculate Tolerance Limit

Since the purpose of the tolerance limit is to identify metals concentrations that are higher than background a one-sided upper tolerance limit was calculated.

As provided in Gibbons, the tolerance limit is calculated from:

TL = mean + K * (std. deviation)

Where K is a factor determined from statistical tables based on the number of samples in the background data set and the desired confidence and coverage goals. Consistent with Gibbons, 1994, a 95% confidence level with 95% coverage was used. Based on a background data set of 10 samples and these goals, and using Table 4.2 of Gibbons (see Appendix B), K was set at 2.911 for all background data sets, except for barium and zinc. The resultant upper tolerance limits are listed in Table C-1.

In the case of barium, inspection of the background data set (see Table C-2) indicates one value (1,130 mg/kg) significantly higher than the other nine values (mean of 244 mg/kg), and likely indicative of anthropogenic sources. Although EPA, 2002 does provide for consideration of anthropogenic sources not related to the site of interest when making background comparisons, for conservative purposes and based on discussions with EPA regarding the background zinc data (see below), this anomalously high barium concentration was removed from the background data set prior to calculating the barium tolerance limit. The background barium mean and standard deviation based on the remaining nine background values are listed in Table C-1. These values along with a K factor based on nine samples were used to calculate the barium tolerance limit in Table C-1.

Similarly for zinc, two values in the background data set (Table C-3) are significantly higher than the other eight values, although none of the zinc values were identified as outliers by a statistical test (Dixon's outlier test) using *PRO UCL*. Notwithstanding these findings and per discussions with EPA regarding the spatial distribution of the zinc concentrations within the background area, the two highest zinc concentrations were removed from the background data set prior to calculating the zinc tolerance limit. The background zinc mean and standard deviation based on the remaining eight background values are listed in Table C-1. These values along with a K factor based on eight samples were used to calculate the zinc tolerance limit in Table C-1.

TABLE C-1 - BACKGROUND SAMPLE STATISTICS - SOIL

	Site-Specific Background Values (mg/kg)				
Compound	Mean	Std. Dev.	Upper Tolerance Limit ⁽¹⁾		
Arsenic	3.44	1.79	8.66		
Barium ⁽²⁾	244	72	462		
Chromium	15.2	3.0	24.0		
Copper	12.1	4.0	23.6		
Lead	13.4	1.5	17.9		
Lithium	21.1	5.2	36.2		
Manganese	377	94	650		
Mercury	0.021	0.005	0.035		
Molybdenum	0.52	0.07	0.74		
Zinc ⁽³⁾	76.3	64.0	280		

- (1) One-side upper tolerance limit for 95% confidence and 95% coverage.
- (2) Barium parameters calculated using data set with highest concentration removed.
- (3) Zinc parameters calculated using data set with two highest concentrations removed.

TABLE C-2 - BARIUM CONCENTRATIONS IN BACKGROUND SOIL SAMPLES

Sample Location	Concentration (mg/kg)
BSS-1	322
BSS-2	361
BSS-3	237
BSS-4	281
BSS-5	150
BSS-6	-1130
BSS-7	281
BSS-8	215
BSS-9	177
BSS-10	177

TABLE C-3 - ZINC CONCENTRATIONS IN BACKGROUND SOIL SAMPLES

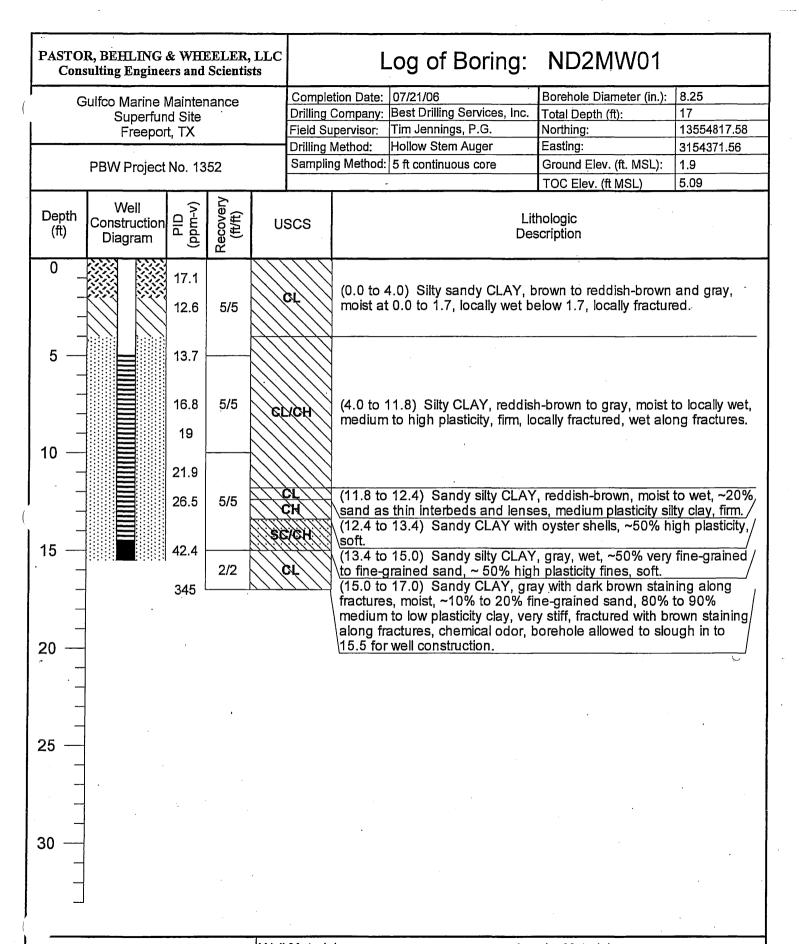
Sample Location	Concentration (mg/kg)
BSS-1	969
BSS-2	81.2
BSS-3	77
BSS-4	40.9
BSS-5	36.6
BSS-6	890J
BSS-7	227Ј
BSS-8	74J
BSS-9	37.1J
BSS-10	36.8J

Note:

Data qualifier: J = estimated value.

APPENDIX D

SOIL BORING LOGS



PBW

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664

Well Materials

(0.0 to 5.0) Casing, 2" sch. 40 PVC (5.0 to 15.0) Screen, 2" sch. 40 PVC, 0.01 slot (15.0 to 15.5) End Cap

Annular Materials

(0.0 to 2.0) Portland Cement with ~ 5% bentonite gel (2.0 to 4.0) Bentonite chips, 3/8" (4.0 to 15.5) Sand, 20/40 silica

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists					Log of Boring: ND3MW02							
Gulfco Marine Maintenance					Comple	tion Date:	07/17/06		Borehole	Diameter (in.):	8.25	
			id Site			Drilling Company:					oth (ft):	22
		eepor						Tim Jennings, P.G.		Northing:		13554692.51
						Drilling Method:		Hollow Stem Auger		Easting:		3154679.33
	PBW Project No. 1352					Samplir	ng Method:	5 ft continuous core		Ground E	Ground Elev. (ft. MSL): 3.7	
	. =								TOC Ele	v. (ft MSL)	6.41	
Depth (ft)	Constru	Well Construction Diagram		Rec (f		scś	Lithologic Description					
0 _	- - - - - -		16.4	1.5/1.5	0.5/0.5 1.5/1.5		(0.0 to 0.5) Sandy CLAY, brown, moist, ~ 30% to 40% fine-grained sand, ~ 60% to 70% medium plasticity clay, firm. (0.5 to 2.0) Sandy CLAY as above, trace black mottling at 2.2,					
- - 5 —			14	5/5		42	decreas	e in sand	content below	w 2.0.	· 	
			9.5				(2.0 to 7	.o, canc	y OLIVI as al	JOVC WILIT		, wot.
10 —			6.8 0.7	5/5					dy CLAY, bro 0% high plast		~ 20% to 50%	fine-grained
			5.4 7.4	5/5	SC	/SM	(11.5 to 14.6) Clayey silty SAND, brown, wet, ~ 30% to 50% medium plasticity fines, ~ 50% to 70% very fine to fine-grained sand,					
15 —			6.1				very sof	. <u> </u>				
			9.9 315	5/5		3P	21.0	on top of	orly graded S			e NAPL at ilt locally, soft,
20 —			1755	1.5/1.5		SH \			ndy CLAV by	roug moio	t - 100/ fine	arninod pand
								igh plasti	city clay, firm,			grained sand, for well
25 —								•			•	
. –	,											
30 —												
				•								
]											

PBW

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664

Well Materials

(0.0 to 11.5) Casing, 2" sch. 40 PVC (11.5 to 21.5) Screen, 2" sch. 40 PVC, 0.01 slot (21.5 to 22.0) End Cap

Annular Materials

(0.0 to 5.0) Portland Cement with ~ 5% bentonite gel (5.0 to 8.0) Bentonite chips, 3/8" (8.0 to 22.0) Sand, 20/40 silica

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists				Log of Boring: ND4MW03						
Gulfco Marine Maintenance Superfund Site Freeport, TX PBW Project No. 1352					Comple	tion Date:	07/17/06		Borehole Diameter (in.)): 8.25
					Drilling Company: Field Supervisor: Drilling Method:		Best Drilling Services, Inc. Tim Jennings, P.G. Hollow Stem Auger		Total Depth (ft):	20
									Northing: Easting:	13554562.67
										3154758.06
									Ground Elev. (ft. MSL):	
								<u> </u>	TOC Elev. (ft MSL)	6.2
Depth (ft)	Well Construction Diagram	(v-mdd)	Recovery (ft/ft)		scs			De	thologic scription	
0 _		0.9	0.5/0.5 1.5/1.5			\\soft.			own, moist, very fine- brown, moist, ~ 20%	/
5 —		1.6	5/5			\fine-gra \(0.6 to 2 (2.0 to 4	ned sand, - 2.0) Sandy 4.2) Sandy	· 80% mediu CLAY, dark	ım plasticity clay, sligh brown, becomes blac y black and dark redo	ntly firm. k below 1.5.
- -		1.9	5/5		2	(4.2 to 8	3.2) Sandy		ove, reddish-brown, r	noist, wet belo
0 —		1.7					0.4) Sandy lighly plastic		wn, wet, ~ 40 very find	e-grained sand
- -		0.82.42.1	5/5		/sc				AND with clayey sand high plasticity clay, v	
5 —		2.9	5/5			~50% ve	ery fine-grain	ned sand, ~	AND and sandy CLAY 50% high plasticity cl	ay, very soft.
0 —		3.4	3/3		H	fine-grai	ned sand, ~		own to grayish brown, lasticity CLAY, soft, b uction.	
. –										
25 —	·									·
0 -					- Lo					

PBW

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock. TX 78664

Well Materials

(0.0 to 7.5) Casing, 2" sch. 40 PVC (7.5 to 17.5) Screen, 2" sch. 40 PVC, 0.01 slot (17.5 to 18.0) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with ~ 5% bentonite gel (3.0 to 5.0) Bentonite chips, 3/8" (5.0 to 18.0) Sand, 20/40 silica

				Scientis		 	,, ,	07/04/06		In .	D:- ' "	1005	
G	Sulfco M			nance				07/21/06 Best Drilling S	Conviose In-		Diameter (in.)): 8.25 17	
			nd Site					Tim Jennings		Total De Northing			5097.66
		reepo	π, ιχ					Hollow Stem		Easting:	•		385.63
		\!!	. N 40	50				5 ft continuou			Elev. (ft. MSL):		303.03
	PBW P	rojeci	: NO. 13	52		Campin	ig weatou.	J IL COMMINGO			ev. (ft MSL)	4.9	
epth (ft)	We Constr Diag	uction	PID (n-mdd)	Recovery (ft/ft)	U	scs				ithologic escription	V. (ILIVIOL)	1 4.5	
0	333	333	19		11	$\overline{\Pi}$							
- -			28.2	5/5				ine-grained			eddish-browr 5 medium to		
5 —			20.9						<u>.</u>				
-	<u> </u>	_	1				(5.0 to 8 fine-grain	.2) Sandy s ned sand ar	silty CLAY, nd silt, 60%	gray to br 6 - 80% m	own, wet, ~ edium to hig	20% to h plasti	40% city clay
_				5/5			soft.		(8.2 - 10.0) Silty clayey SAND, brown to gray, wet, ~ plasticity silt and clay, ~ 50% very fine-grained to fine				
_ _ 			1.1	5/5	SN	A/SC	(8.2 - 10 plasticity						
- 0 — - -			1.1	5/5 4.5/5		A/SC	(8.2 - 10 plasticity firm. (10.0 to to 40% s	silt and clay	y, ~ 50% vo	ery fine-gr Y, reddished sand, ~	ained to fine a-brown to gr 60% to 80%	-graine ay, wet	d sand
0 —			1.1				(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity	15.0) Silty silt and very y soft, oyste	sandy CLA fine-graine r shells at y CLAY wisand, ~ 20 actured.	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	ained to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ay, wet high p gray, w	d sand , ~ 209 blasticit /et, mediu
			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	alned to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ay, wet high p gray, w ~ 50% e-sand,	d sand , ~ 209 blasticit /et, mediu
5 —			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	ained to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ay, wet high p gray, w ~ 50% e-sand,	d sand , ~ 209 blasticit /et, mediu
- - - - - -			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	alned to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ay, wet high p gray, w ~ 50% e-sand,	d sand , ~ 209 blasticit /et, mediu
; —			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	alned to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ay, wet high p gray, w ~ 50% e-sand,	d sand , ~ 209 blasticit /et, mediu
; —			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	alned to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ay, wet high p gray, w ~ 50% e-sand,	d sand , ~ 209 blasticit /et, mediu
- - - - - -			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	alned to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ay, wet high p gray, w ~ 50% e-sand,	d sand , ~ 209 blasticit /et, mediu
5			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	alned to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ay, wet high p gray, w ~ 50% e-sand,	d sand , ~ 209 blasticit /et, mediu
; — — — — — — — — — — — — — — — — — — —			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	alned to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ay, wet high p gray, w ~ 50% e-sand,	d sand , ~ 209 blasticit /et, mediu
; — — — — — — — — — — — — — — — — — — —			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	alned to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ay, wet high p gray, w ~ 50% e-sand,	d sand , ~ 209 blasticit /et, mediu
; — — — — — — — — — — — — — — — — — — —			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	alned to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ay, wet high p gray, w ~ 50% e-sand,	d sand , ~ 20% blasticit /et, mediu
5			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	alned to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ay, wet high p gray, w ~ 50% e-sand,	d sand , ~ 209 blasticit /et, mediu
5			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	alned to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ray, wet high p gray, w ~ 50% e-sand,	d sand , ~ 209 blasticit /et, mediu
			1.1	4.5/5		H22	(8.2 - 10 plasticity firm. (10.0 to to 40% s clay, ver (15.0 to ~ 30% fi plasticity (16.5 to	15.0) Silty silt and very y soft, oyste 16.5) Sand ne-grained silty, very from 17.0) Sand	sandy CLA fine-graine r shells at y CLAY wi sand, ~ 20 actured. y CLAY, b	Y, reddished sand, ~ 11.8 to 12 th carbona % carbona	alned to fine a-brown to gr 60% to 80% 2.2. ate nodules, ate nodules,	graine ray, wet high p gray, w ~ 50% e-sand,	d sand , ~ 209 blasticit /et, mediu

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Well Materials

(0.0 to 6.5) Casing, 2" sch. 40 PVC (6.5 to 16.5) Screen, 2" sch. 40 PVC, 0.01 slot (16.5 to 17.0) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with ~ 5% bentonite gel (3.0 to 5.0) Bentonite chips, 3/8" (5.0 to 17.0) Sand, 20/40 silica

Cons	sulting Engine	ers and	Scientis	sts			og of Boring	: NE3MW05	
G	Sulfco Marine	Maintei	nance			etion Date:	07/21/06	Borehole Diameter (in.):	8.25
_	Superfur				Drilling	Company:	Best Drilling Services, Ir		22
	Freepo				Field Su	upervisor:	Tim Jennings, P.G.	Northing:	13554868.05
							Hollow Stem Auger	Easting:	3154789.25
	PBW Project	No. 13	52		Sampli	ng Method:	5 ft continuous core	Ground Elev. (ft. MSL):	3.3
								TOC Elev. (ft MSL)	6.53
Depth (ft)	Well Construction Diagram	(v-mqq)	Recovery (ft/ft)		SCS			Lithologic Description	
0 _		0		7.7.7.2.E	KO FILL			, brown, moist, ~ 50% m	edium plasticit
		0	4/5			(0.6 to 2 sand, ~ (2.3 to 3	70% medium plastici 3.7) Silty sandy CLA	own, wet, ~ 30% fine to only clays, very soft. ', gray to black, moist, ~	10% to 20% s
5 —				· :		and fine	<u>-grained sand, ~ 80%</u>	6 to 90% medium plastici	y ciay, Timi.
- - - -		0.4	1/5	S	SM .	70% ver from gro barrel ca	y fine to fine-grained undwater in reducing	wn, wet, ~ 30% to 40% fi sand, soft, black sludge- environment, debris bloc large anchor rope aroun poor recovery.	like material king core
-		0	3/5	SM	ı/s¢	medium		ND, brown, wet, ~ 40% ts, ~ 50% to 60% very fine	
5 —		0	3/5		D	CLAY lo "confining below ~ (16.5 to	cally, due to poor red g" clay interpreted at 16.5. 20.0) Poorly graded	ND as above with thin in overy very little clay obse ~ 15.5 to 16.5 with the '	rved, first 'lower sand"
0 —					"	_	rained sand, very "so	• •	
-		o	2/2			medium- Notes:	grained sand.	SAND, brown, wet, very f	
					,			n water in borehole, but review in core at any dept	
5 —							es e		
-									
\dashv									
0 —									

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Well Materials

(0.0 to 5.5) Casing, 2" sch. 40 PVC (5.5 to 15.5) Screen, 2" sch. 40 PVC, 0.01 slot (15.5 to 16.0) End Cap

Annular Materials

(0.0 to 2.0) Portland Cement with ~ 5% bentonite gel (2.0 to 4.0) Bentonite chips, 3/8" (4.0 to 16.0) Sand, 20/40 silica (16.0 to 22.0) Bentonite chips, 3/8"

Log of Boring: NF2MW06 PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists Completion Date: 07/31/06 Borehole Diameter (in.): 8.25 Gulfco Marine Maintenance Best Drilling Services, Inc. Drilling Company: Total Depth (ft): 20 Superfund Site Field Supervisor: 13555117.77 Tim Jennings, P.G. Northing: Freeport, TX Easting: Drilling Method: Hollow Stem Auger 3154650.46 Sampling Method: 5 ft continuous core Ground Elev. (ft. MSL): 2.2 PBW Project No. 1352 TOC Elev. (ft MSL) 5.35 Recovery (ft/ft) Well PID (v-mdd) Depth Lithologic Construction **USCS** (ft) Description Diagram (0.0 to 0.7) Sandy CLAY, brown, moist, ~ 20% fine-grained sand, ~ 3.4 80% medium plasticity clay, firm, abundant roots. 4/4 ŒĽ 3.5 (0.7 to 5.2) Silty CLAY, gray to brown, moist, medium plasticity, firm. 3.1 4/4 (5.2 to 9.8) Silty sandy CLAY and clayey silty SAND, gray to brown, 2.8 CLISMISC wet, ~ 40% to 50% very fine-grained sand, ~ 50% to 60% medium plasticity clay and silt, soft to slightly firm. 2.8 10 4/4 4.1 (9.8 to 13.9) Poorly graded SAND and silty SAND, brown, wet, ~ 20% SP/SM to 30% low plasticity fines, ~ 70% to 80% very fine to fine-grained 4.7 4/4 (13.9 to 14.5) Silty CLAY, brown, moist to wet, high plasticity fines, 15 5.6 SPISM (14.5 to 16.3) Silty SAND and poorly graded SAND, brown, gray 6.1 below 15.6, very fine to fine-grained sand with ~ 10% to 20% silt above 15.6, moderate chemical odor where gray. 4/4 (16.3 to 17.9) Sandy CLAY, reddish-brown, moist (wet on thin sand 6.3 \interbeds), ~ 80% to 90% high plasticity clay, soft, firm at 17.2 to 17.9 (17.9 to 20.0) Poorly graded sand, brown, wet, very fine to 20 fine-grained sand, soft. 25 30

PBW

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Well Materials

(0.0 to 6.0) Casing, 2" sch. 40 PVC (6.0 to 16.0) Screen, 2" sch. 40 PVC, 0.01 slot (16.0 to 16.5) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with ~ 5% bentonite gel (3.0 to 5.0) Bentonite chips, 3/8" (5.0 to 16.5.0) Sand, 20/40 silica

СОПО	ulting Er	gme	15 anu	Scientis	15			og of Bori		SB4MW07	· · · · · · · · · · · · · · · · · · ·	
G	ulfco Ma	rine l	Mainter	ance		Comple	tion Date:	07/20/06		Borehole Diameter (in.):	8.25	
			d Site					Best Drilling Service	es, Inc.	Total Depth (ft):	20	
	Fre	epor	t, TX	. *				Tim Jennings, P.G.		Northing:	13554065.21	
	-	•						Hollow Stem Auger		Easting:	3154818.19	
	PBW Pr	oject	No. 13	52		Samplir	ng Method:	5 ft continuous core	;	Ground Elev. (ft. MSL):	4.6	
							TOC Elev. (ft MSL) 7.57					
epth (ft)	Wel Constru Diagra	ction	(v-mdd)	Recovery (ft/ft)	US	SCS				nologic cription		
0 _			1.3			HH)						
_						Y//	(0 0 to /	(O) Fill sand o	י ופעבוי	and clay, black-stained	hee hees h	
			153	4/5						e hydrocarbon odor.	a sanu anu	
_]					
5			11.6	-	$\langle \langle \langle \langle \rangle \rangle$	\sim						
_							}					
-			7.9	5/5		////	/5 O to 1	1 0) CLAV rodd	ich brov	wn to gray, moist, med	lium plaeticity	
_			7.0	0,0	1/1	3t///		s silty clay below		wit to gray, moist, met	num plasticity	
-			5.9			////						
0 —												
-			5.2		1	///						
_				5/5			}					
			6.1	5/5		////						
_							44.01	40.0) 077	01.437		40 1 00 00	
5 —			8.1		1//	;H///	fine_arai	18.9) Silty sandy	to 90%	, gray to brown, wet, ~ high plasticity clay, s	off	
_			8.1				inic-giai	neu sanu, - 00 %	10 30 7	mgn plasticity day, s	OIL.	
_												
_			1.8	5/5								
_					111		(1 P O to	20 0) Cilty CLAV	arov	maiat law ta madium	planticity clay	
o —			2	•	1/1	37//	and silf	very stiff, first con	, gray, ifining k	moist, low to medium	plasticity clay	
							Carra one	70. y Can., 11101 CO.				
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5 —												
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Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664

Well Materials

(0.0 to 9.5) Casing, 2" sch. 40 PVC (9.5 to 19.5) Screen, 2" sch. 40 PVC, 0.01 slot (19.5 to 20.0) End Cap

Annular Materials

(0.0 to 6.0) Portland Cement with ~ 5% bentonite gel (6.0 to 8.0) Bentonite chips, 3/8" (8.0 to 20.0) Sand, 20/40 silica

	R, BEHI sulting E						L	og o	f Borir	ng:	SE1I	MW08		-
G	Sulfco Ma			nance			tion Date: Company:	07/19/06 Best Drilli	ng Services	lne		Diameter (in.):	8.25 20	
			nd Site				pervisor:	Tim Jenni		, 1110.	Total Depti Northing:	1 (11):	13554391.	06
		eepor	ι, ι Λ			Drilling			em Auger		Easting:		3154820.1	
	DDM D	roioat	No. 12	50					uous core		<u>_</u>	ev. (ft. MSL):	4.4	
-	PBW Pi	ojeci	140. 13	552		TOC Elev. (f						<u>`</u>	7.54	
Depth (ft)	We Constru Diagr	ıction	PID (ppm-v)	Recovery (fl/ft)		scs				Des	nologic cription		77.07	
0 _			5			FiJV //	(0.0 to 0).8) FILL	., sand, gr	avel, a	and clay, h	nard.		
_			3.4	5/5										
5 —			0.3			25	fine-grai	ned san	and cart	onate	nodules,	h-brown, mo ~80% med		ity
- 			3.3	5/5			ciay, tim	1 to stiir,	possible fi	iii at u.	8 to 4.0.			
10 —			2.7		81	lysp:	(8.4 to 11.7) Silty clayey SAND, brown to gray, moist, wet below ~ 9.0, ~ 50% high plasticity fines, ~ 50% very fine to fine-grained sand,							
<u></u>			2.3	5/5	7878787878 8 18 18 18 18 18 78 18 18 18 18 18 78 18 18 18 18 18 78 18 18 18 18 18		soft.					***		
_ _ 15 —			1.3	5/5		SIM:			ity SAND, fine-grain			0% to 30% t	fines, ~ 70%	% to
_			3		*****	*******		40.0).0	. 01	0.4.15	·	. 500/		
_			3.5	5/5	37	I/SP	fines, ~	50% fine	-grained s	and, s	oft.	vet, ~ 50%		
20 —			1.9		1/1	X	plasticity	fines, fir	m, first co	nfining	clay.	rayish-brow	n, moist, mg	JII
_														
_	j													
_	1					_					•			5
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Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664

Well Materials

(0.0 to 8.5) Casing, 2" sch. 40 PVC (8.5 to 18.5) Screen, 2" sch. 40 PVC, 0.01 slot (18.5 to 19.0) End Cap

Annular Materials

(0.0 to 4.0) Portland Cement with ~ 5% bentonite gel (4.0 to 6.5) Bentonite chips, 3/8" (6.5 to 20.0) Sand, 20/40 silica

						C. D.L.			December 1 Discontinu	0.05
G	Sulfco Marine		nance			etion Date:	07/20/06 Best Drilling Services		Borehole Diameter (in.):	8.25
	Superfu						Tim Jennings, P.G.		Total Depth (ft): Northing:	13554149.98
	Freepo	π, 1					Hollow Stem Auger		Easting:	3155180.49
	DDW D:	. N 40	50				5 ft continuous core		Ground Elev. (ft. MSL):	4.7
	PBW Projec	I NO. 13	52		Campin	ig wellou.	o it continuous core		`	7.66
		T		i		l		L	TOC Elev. (ft MSL)	17.00
epth (ft)	Well Construction Diagram	Old (ppm-v)	Recovery (ft/ft)	US	SCS		·		ologic cription	
) _ -		2.8 20.1	3.5/5				.4) FILL, sand, g undant roots.	ravel, a	and clay, brown, moist	to dry, very
- - 5		20.1	3.5/5		3P.		.2) Poorly graded at 2.4 to 2.6, fine), dark brown, moist, t d sand, soft.	race black
_	 	6.3							•	
_		1.5	5/5		34		e.5) Silty CLAY, but d moisture and so		noist, medium plasticit low 8.0.	y fines, stiff,
		1.7								
)		1.9				(O. F.). 4	0.00.00			00/ 1 1
_		1.8	5/5	SN	nsc.				brown, wet, ~ 40 to 5 ry fine to fine-grained	
_			0,0	:::::				-		-
5 —		1.8			· · · · · ·				graded sand, interbe	
_		1.8			SM.		0% to 40% high p ned sand, very so		fines, ~ 60% to 80%	very fine to
		2.2	5/5			(17 Q to	19.4) Silty clayey	SAND	, brown, wet, ~ 50% h	iah plasticity
_				SIV	i/șc				ned sand and sand ir	
) —		1.5		118	ZV	(19.4 to	20.0) Silty CLAY,	grayis	h-brown, moist, high p	lasticity fines
,—						very firm	•			
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Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Well Materials

(0.0 to 9.5) Casing, 2" sch. 40 PVC (9.5 to 19.5) Screen, 2" sch. 40 PVC, 0.01 slot (19.5 to 20.0) End Cap

Annular Materials

(0.0 to 6.0) Portland Cement with ~ 5% bentonite gel (6.0 to 7.9) Bentonite chips, 3/8" (7.9 to 20.0) Sand, 20/40 silica

	Pulfoo Mari-	o Mainta	nonos		Comple	tion Date:	07/20/06		Borehole Diameter (in.):	8.25	
G	Sulfco Marin Super	ie Maintei fund Site	nance	į		Company:	Best Drilling S	Services, Inc.	Total Depth (ft):	20	
		port, TX		1		pervisor:	Tim Jennings		Northing:	13554284.4	
					Drilling	Method:	Hollow Stem	Auger	Easting:	3155154.1	
	PBW Proje	ect No. 13	352	Ĵ	Samplin	ng Method:	5 ft continuou	ıs core	Ground Elev. (ft. MSL):	5	
							TOC Elev. (ft MSL)	8.01			
pth ft)	Well Constructi Diagram		Recovery (ft/ft)	US	SCS				hologic scription		
_		<u> </u>		SIV	/sc				brown, moist, ~ 50% lo	w plasticity	
		23 1.5		11/8	7//				firm, abundant roots. o gray, moist, low plast	ticity fines st	
		2.4	4/5		777						
_		33 1.7		s	M	(2.5 to 5.0) Silty SAND, brown to black, moist, ~ 40% low plasticity fines, ~ 60% fine-grained sand, black staining has slight					
					<u>:::::</u>		rbon odor.				
·	<i>"1 K</i> /L	1.5			111	/E 0 1- 1) 6) Dile		addiah bassa assist	100/ 1- 000	
_		\vee							eddish brown, moist, ~ % to 90% medium plas		
_		1.7	5/5	11/1	(11)	firm, stif		ira only out	, to oo, modium plas	conty oldy,	
_	7 1 1				<i>ΪΪ</i> ,						
_		1.7		SM	I/SC				brown, moist, ~ 50% l	high plasticity	
		1 -		XXXXX	ZZZZZ	tines, ~	50% very fin	ne-grained s	and, very soft.		
		1.7 1.5	5/5		MICL	(10.5 to SAND, I	15.0) Interlorown, wet,	bedded silty	SAND, sandy SILT, a % high plasticity fines a		
- -		1.5	5/5			(10.5 to SAND, I	15.0) Interlorown, wet,	bedded silty ~40% to 60%	SAND, sandy SILT, a % high plasticity fines a		
- -			5/5	SMA		(10.5 to SAND, I 40 to 60 (15.0 to	15.0) Interlorown, wet, 10% very fine-	bedded silty ~40% to 60% grained san	SAND, sandy SILT, and high plasticity fines and, soft.	as interbeds,	
- - - ; - -		1.5 1.4		SMA	HICL	(10.5 to SAND, I 40 to 60 (15.0 to ~60% v	15.0) Interforown, wet, 10% very fine-	bedded silty ~40% to 60% grained san SAND, brow ne-grained s	SAND, sandy SILT, and high plasticity fines and, soft.	as interbeds,	
		1.5 1.4 1.4		SMA	MHIGE	(10.5 to SAND, I 40 to 60 (15.0 to ~60% v	15.0) Interforown, wet, 20% very fine-	bedded silty ~40% to 60% grained san SAND, brow ne-grained s	SAND, sandy SILT, and high plasticity fines and, soft. n, wet, ~ 40% medium and, soft.	as interbeds,	
-		1.5 1.4 1.4		SMA	MHIGE	(10.5 to SAND, I 40 to 60 (15.0 to ~60% v	15.0) Interforown, wet, 20% very fine-	bedded silty ~40% to 60% grained san SAND, brow ne-grained s	SAND, sandy SILT, and high plasticity fines and, soft. n, wet, ~ 40% medium and, soft.	as interbeds,	
- - - - - -		1.5 1.4 1.4		SMA	MHIGE	(10.5 to SAND, I 40 to 60 (15.0 to ~60% v	15.0) Interforown, wet, 20% very fine-	bedded silty ~40% to 60% grained san SAND, brow ne-grained s	SAND, sandy SILT, and high plasticity fines and, soft. n, wet, ~ 40% medium and, soft.	as interbeds,	
-		1.5 1.4 1.4		SMA	MHIGE	(10.5 to SAND, I 40 to 60 (15.0 to ~60% v	15.0) Interforown, wet, 20% very fine-	bedded silty ~40% to 60% grained san SAND, brow ne-grained s	SAND, sandy SILT, and high plasticity fines and, soft. n, wet, ~ 40% medium and, soft.	as interbeds,	
		1.5 1.4 1.4		SMA	MHIGE	(10.5 to SAND, I 40 to 60 (15.0 to ~60% v	15.0) Interforown, wet, 20% very fine-	bedded silty ~40% to 60% grained san SAND, brow ne-grained s	SAND, sandy SILT, and high plasticity fines and, soft. n, wet, ~ 40% medium and, soft.	as interbeds,	
		1.5 1.4 1.4		SMA	MHIGE	(10.5 to SAND, I 40 to 60 (15.0 to ~60% v	15.0) Interforown, wet, 20% very fine-	bedded silty ~40% to 60% grained san SAND, brow ne-grained s	SAND, sandy SILT, and high plasticity fines and, soft. n, wet, ~ 40% medium and, soft.	as interbeds,	
		1.5 1.4 1.4		SMA	MHIGE	(10.5 to SAND, I 40 to 60 (15.0 to ~60% v	15.0) Interforown, wet, 20% very fine-	bedded silty ~40% to 60% grained san SAND, brow ne-grained s	SAND, sandy SILT, and high plasticity fines and, soft. n, wet, ~ 40% medium and, soft.	as interbeds,	
		1.5 1.4 1.4		SMA	MHIGE	(10.5 to SAND, I 40 to 60 (15.0 to ~60% v	15.0) Interforown, wet, 20% very fine-	bedded silty ~40% to 60% grained san SAND, brow ne-grained s	SAND, sandy SILT, and high plasticity fines and, soft. n, wet, ~ 40% medium and, soft.	as interbeds,	
		1.5 1.4 1.4		SMA	METER	(10.5 to SAND, I 40 to 60 (15.0 to ~60% v	15.0) Interforown, wet, 20% very fine-	bedded silty ~40% to 60% grained san SAND, brow ne-grained s	SAND, sandy SILT, and high plasticity fines and, soft. n, wet, ~ 40% medium and, soft.	as interbeds,	
- -		1.5 1.4 1.4		SMA	METER	(10.5 to SAND, I 40 to 60 (15.0 to ~60% v	15.0) Interforown, wet, 20% very fine-	bedded silty ~40% to 60% grained san SAND, brow ne-grained s	SAND, sandy SILT, and high plasticity fines and, soft. n, wet, ~ 40% medium and, soft.	as interbeds,	
		1.5 1.4 1.4		SMA	METER	(10.5 to SAND, I 40 to 60 (15.0 to ~60% v	15.0) Interforown, wet, 20% very fine-	bedded silty ~40% to 60% grained san SAND, brow ne-grained s	SAND, sandy SILT, and high plasticity fines and, soft. n, wet, ~ 40% medium and, soft.	as interbeds,	

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446

Well Materials

(0.0 to 9.0) Casing, 2" sch. 40 PVC (9.0 to 19.0) Screen, 2" sch. 40 PVC, 0.01 slot (19.0 to 19.5) End Cap

Annular Materials

(0.0 to 5.0) Portland Cement with ~ 5% bentonite gel (5.0 to 7.0) Bentonite chips, 3/8" (7.0 to 20.0) Sand, 20/40 silica

					1						_
G	ulfco Marine	Mainter	nance			etion Date:	07/20/06		Borehole Dian		8.25
	Superfur					Company:		Services, Inc):	20
	Freepo	rt, TX				upervisor:	Tim Jennin		Northing:		13554215.04
						Method:	Hollow Ster		Easting:		3155265.88
	PBW Project	No. 13	52		Samplin	ng Method:	5 ft continu	ous core	Ground Elev.	<u> </u>	5
_					<u></u>	r			TOC Elev. (ft l	MSL)	8.11
Depth (ft)	Well Construction Diagram	(v-mqq)	Recovery (ft/ft)	U	SCS				_ithologic escription		
0 -	0.1					(0.0 to 2.5) FILL, sandy clay with gravel and oyster shells, dark brown, moist, ~ 20% to 30% fine-grained sand, moist, ~ 20% to 30 fine-grained sand, ~ 15% gravel and oyster shells, ~ 70% to 80% low plasticity clay, very stiff.					
5		1.6	5/5		CL	fine-gra	ined sand,	~ 90% med	n-brown, moist, lum plasticity cl gments and car	ay, very s	tiff, firm
10 — - - -		1.9	5/5	C	/SC		ne-grained		and SAND, browthin interbeds		
 15 —		2 2				(13 3 to	18 0) Siltv	SAND brow	wn, wet, ~30% t	o 40% fin	es ~ 60% to
_		1.8	5/5		SM.			ne-grained s		.o 4070 m	100, 00 70 10
_ _ 20 —						(18.0 to fine-grai	20.0) Silty	y sandy CL <i>A</i> and silt, ~ 8	XY, brown, mois 0% to 90% med	t, ~ 10% t lium plast	to 20% icity clay, firm
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Tel (512) 671-3434 Fay (512) 671-3446

Well Materials

(0.0 to 8.0) Casing, 2" sch. 40 PVC (8.0 to 18.0) Screen, 2" sch. 40 PVC, 0.01 slot (18.0 to 18.5) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with \sim 5% bentonite gel (.0 to 5.0) Bentonite chips, 3/8" (5.0 to 20.0) Sand, 20/40 silica

Cons	sulting E	ngine	ers and	Scientis	sts	<u> </u>		.09 01	Boring	9 ·	SF7MW1		
G	ulfco Ma	arine l	Mainter	nance	-	Comple	tion Date:	07/20/06			orehole Diameter (25
			d Site	10.100		Drilling	Company:	Best Drillir	ng Services, I	lnc. T	otal Depth (ft):	20)
		eepor				Field Su	pervisor:	Tim Jennir	ngs, P.G.	N	orthing:	13	3554105.36
							Method:	Hollow Ste		E	asting:	31	55304.07
	PBW P	roject	No. 13	52		Samplir	ng Method:	5 ft contin	uous core	G	round Elev. (ft. MS	L): 4.	7
										Ţ	OC Elev. (ft MSL)	7.	96
epth (ft)	We Constru Diagr	uction	(v-mdd)	Recovery (ft/ft)	U:	SCS				Litho Descr	iption		
0 _		XXX	1.5					.0) FILL ned sand		ded S	AND, brown, mo	ist, ver	y fine to
			21.4	4/5							el and shells, stif locally near 2.0		
5			1.8 2.6								<u>. </u>		
			·	2.5/5			(5.0 to 1 10% vei clay, stif	y fine-gra	sandy CLA ined sand	\Y, da and si	rk brown to gray, lt, ~ 90% to 95%	, moist, mediu	~5% to im plasticit
0 —			1.9	5/5	SN	NSC	brown, v	vet, ~ 30°	% high plas	ticity c	vey SAND, grayis lay as clayey sar ine to fine-graind	nd inte	rbeds, ~
5 — — —			1.9 1.7	E/E		SP.					D with silt, brown ine-grained sand		
0 —			1.8	5/5	SPIS	M/SC	SAND, b \fine-grai	rown, we ned sand	t, ~ 50% lo , soft.	w plas	graded SAND a ticity fines, ~ 50° brown, moist, hig	% very	fine to
_							very firm	, first con	fining clay.			JII pias	
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<u>Well Materials</u>

(0.0 to 8.5) Casing, 2" sch. 40 PVC (8.5 to 18.5) Screen, 2" sch. 40 PVC, 0.01 slot (18.5 to 19.0) End Cap

Annular Materials

(0.0 to 5.0) Portland Cement with ~ 5% bentonite gel (5.0 to 7.0) Bentonite chips, 3/8" (7.0 to 20.0) Sand, 20/40 silica

	R, BEHLING aulting Engine					L	og of Borin	ng:	SG2MW13	
G	ulfco Marine I	Mainter	nance		Comple	tion Date:	07/19/06		Borehole Diameter (in.):	8.25
Ŭ	Superfun		101100		Drilling	Company:	Best Drilling Services	s, Inc.	Total Depth (ft):	22
	Freepor				Field Su	ipervisor:	Tim Jennings, P.G.		Northing:	13554472.65
		<u> </u>			Drilling I	Method:	Hollow Stem Auger	E	Easting:	3155012.01
	PBW Project	No. 13	352		Samplin	ng Method:	5 ft continuous core	[6	Ground Elev. (ft. MSL):	4.5
									TOC Elev. (ft MSL)	7.71
Depth (ft)	Well Construction Diagram	(n-wdd) Old	Recovery (ft/ft)	US	SCS			Lith	ologic cription	
0 _		1.4				(0.0 TO	2.1) FILL, sand, g	gravel, a	and clay, firm, soft.	
_		11.1	3.5/5	1	SP	(2.1 to 3	3.0) FILL, sand, br	rown m	noist	
5 —						(2.110	, Tier, saira, si	Own, II		
_		3.4 4.6	5/5	CF	(CH	to 30%	1.2) Sandy silty C fine-grained sand a clay, firm.	CLAY, re and silt	eddish-brown to gray, , ~ 70% to 80% medi	moist, ~ 20% um to high
10 —		4				P.2.01.01.1				,
		5.8								
		4.9	5/5	SPIS	ADMICE.	brown, v	vet, ~ 50% to 60%	poorly	D, silty SAND, and sar graded fine-grained s , ~ 40% to 50% high	sand interbed
15 —		5.3 5.3				as intert	eds.		·,	
		3.2 4.4	5/5	1/6	H		18.2) CLAY, redd t confining clay.	lish-bro	wn to brown, moist, h	igh plasticity
20 —				CHI	PISC		20.0) CLAY as about oyster shells) inter		th ~ 45% shell-derive pronw, wet.	d sand
. –		5.2	2/2		P.	(20.0 to	22.0) Shell-derived	SAND	, brown, fine to coarse	-grained, wet.
_			•							
25 —										
. 7							•		•	-
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30 ─			•			•				
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Well Materials

(0.0 to 6.0) Casing, 2" sch. 40 PVC (6.0 to 16.0) Screen, 2" sch. 40 PVC, 0.01 slot (16.0 to 16.5) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with ~ 5% bentonite gel (3.0 to 5.0) Bentonite chips, 3/8" (5.0 to 17.0) Sand, 20/40 silica (17.0 to 20.0) Bentonite chips, 3/8"

	R, BEHLIN culting Engi					L	og of E	Boring:	SH7MW14	
G	ulfco Marin	e Mainte	nance			tion Date:	07/19/06		Borehole Diameter (in.):	
	Super	fund Site					Best Drilling S		Total Depth (ft):	22
	Free	port, TX					Tim Jennings		Northing:	13554264.46
					Drilling		Hollow Stem		Easting:	3155446.95
	PBW Proje	ect No. 13	352		Samplir	ng Method:	5 ft continuou	s core	Ground Elev. (ft. MSL):	5.2
			Τ.						TOC Elev. (ft MSL)	8.1
Depth (ft)	Well Constructi Diagram		Recovery (ft/ft)	US	SCS				hologic scription	
0		33			<u> </u>	(0.0 to 1 base ma		nd GRAVE	L, very poor recovery,	very hard road
5 —			0.5/5			Dase III	acriai.			/
3 -		11.7	5/5			(1.0 to 1 fine-gra	1.4) Sandy ined sand, ~	CLAY, gray 80% to 909	rish-brown, moist, ~ 10 % medium plasticity cla	0% to 20% ay, soft.
10 —		10.8 10.7								
_		11.9	5/5	\$	SP		13.0) Poorlined, soft.	y graded SA	AND, brown, wet, very	fine-grained to
15 —		10.4								
- - -		11.5 10.7	5/5	SP/\$	M/SC	brown, v			AND with silty sand an ne-grained sand, ~ 10	
20 — - -		12.1	2/2		W)	fine-grai	ned sand be	ds, ~ 80% l	own to gray, moist, ~ 2 high plasticity clay, fim well construction.	0% n, borehole
25 —						N.				
· -										
									C	
30 —				•						
_					;					
-								•		

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664

Well Materials

(0.0 to 10.0) Casing, 2" sch. 40 PVC (10.0 to 20.0) Screen, 2" sch. 40 PVC, 0.01 slot (20.5 to 21.0) End Cap

Annular Materials

(0.0 to 6.0) Portland Cement with ~ 5% bentonite gel (6.0 to 8.0) Bentonite chips, 3/8" (8.0 to 21.0) Sand, 20/40 silica

	R, BEHLING of sulting Engine					L	og of Boring	: SJ1MW15	
G	Sulfco Marine I	Mainter	nance		Comple	etion Date:	07/19/06	Borehole Diameter (in.):	8.25
Ŭ	Superfun		101100		Drilling	Company:	Best Drilling Services, Ir	c. Total Depth (ft):	25
	Freepor				Field Su	pervisor:	Tim Jennings, P.G.	Northing:	13554764.11
•					Drilling	Method:	Hollow Stem Auger	Easting:	3155165.2
	PBW Project	No. 13	352		Samplir	ng Method:	5 ft continuous core	Ground Elev. (ft. MSL):	2.5
	<u> </u>							TOC Elev. (ft MSL)	5.61
Depth (ft)	Well Construction Diagram	(v-mqq)	Recovery (fl/fl)	U	scs			Lithologic Description	
0		3.4			1111	(0.0 to 1	.0) Sandy CLAY, brow	vn, moist, ~ 40% fine to m	edium-
		5.4			////	grained	sand, ~ 60% low plast	icity clay, soft.	
_		3.9	3/5						
_					///2	1			
			!	///		(1.0 to 7	7.5) Sandy CLAY, red	ddish-brown to gray, mois	t, ~ 10%
5		5.9			////	Tine-grai	ined sand and slit, ~ s	90% medium plasticity cla	у.
_					////				
_		7.3	4/5		7777				
_		6.9	4/5						
_									
10 —									
_		5.9			**************************************				

		5.5	4.5/5		10.0.0.0.0.0.0.0 0.0.0.0.0.0.0.0.0 0.0.0.0.			ND, brown, moist to wet b	
				SE	'ISM			es as interbeds, ~ 60% t	
15							ine-grained sand with and 13.2 to 15.0, sof	poorly graded sand inter	beds at 11.5
15 —		7.3				10 12,5	and 13.2 to 13.0, 501	L,	
-									
		8.4	5/5						
		0	0.0						
· —		7.5							
20 —				!!!!					
_		5.9			////	(20.04)	00.7) 0:14-01.6\/		il flagt
-				1//8	//#2	confining		ay, moist, high plasticity, f	irm, first
_		9.2	5/5				y ciay.	•	
				777		(23.7 to	25.0) Poorly graded	SAND, brown, wet, very	fine to
25		10.8			SP .	fine-grai	ned sand, soft, boreh	role allowed to slough in t	to 24.0 for we
						construc			
							,		
			•		•				
30 —									
_									
_									
				•					

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2201 Double Creek Dr., Suite 4004
Round Rock, TX 78664

Well Materials

(0.0 to 10.0) Casing, 2" sch. 40 PVC (10.0 to 20.0) Screen, 2" sch. 40 PVC, 0.01 slot (20.5 to 20.5) End Cap

Annular Materials

(0.0 to 5.5) Portland Cement with ~ 5% bentonite gel (5.5 to 7.5) Bentonite chips, 3/8" (7.5 to 21.0) Sand, 20/40 silica (21.0 to 24.0) Bentonite chips, 3/8"

		<u> </u>				Comple	tion Data:	07/18/06		Borehole Diameter (in.):	8.25
G	Sulfco Ma			nance			tion Date: Company:	Best Drilling Sen	ices Inc	Total Depth (ft):	25
			d Site					Tim Jennings, P.		Northing:	13554383.75
	<u> </u>	eepor	ι, ι Α			Drilling I		Hollow Stem Aug		Easting:	3155635.14
	PBW P	roioot	No. 12	E 2				5 ft continuous c		Ground Elev. (ft. MSL):	4.7
	LDAAL	ojeci	. 100. 13	52			.3			TOC Elev. (ft MSL)	7.19
Depth (ft)	We Constru Diagr	iction	PID (v-mdd)	Recovery (ft/ft)	U	scs	·			hologic scription	
0 _			0				(0.0 to 2	2.0) FILL, crust	ned shell.		
_			0	5/5			(2.0 to 3 roots, m		ly gravelly	clay with brick fragme	ents, abundar
5 —			0.3	5/5			reddish- medium	brown and gra -grained sand,	y, moist, <i>-</i> ~ 80% to	CLAY, brown, mottled ~ 10% to 20% fine to 90% medium to high ided sand at 4.6 to 5.0	plasticity clay
- 10			0.2				-				
- -	-		0		•	SM .		11.4) Silty SA fine-grained sa		n, wet, ~ 30% to 40%	fines, ~ 60%
_ _ 15 —			0.1	5/5		6P	(11.4 to	17.0) Poorly g	raded SA	AND, brown, wet, fine-	grained, soft.
_			0.1	5/5			(17 0 to	18 5) Clavey 9	SAND br	own, wet, ~ 50% high	nlasticity clay
_			0.4	5/5		3C		ine-grained sar			plastisky slay
20 — -			1.9			3P.				AND, brown, wet, very serbeds locally, very so	
_			1.5 2.3	5/5		H.	fine-grai	ned sand, ~ 80)% high p	rk grayish-brown, mois lasticity clay, few inter llowed to slough in to	bedded sand
25 — _			2.0				construc				
- -	-										
30 — —										•	

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Well Materials

(0.0 to 12.5) Casing, 2" sch. 40 PVC (12.5 to 22.5) Screen, 2" sch. 40 PVC, 0.01 slot (22.5 to 23.0) End Cap

Annular Materials

(0.0 to 7.0) Portland Cement with ~ 5% bentonite gel (7.0 to 9.0) Bentonite chips, 3/8" (9.0 to 23.0) Sand, 20/40 silica

	R, BEHLING ulting Engine					L	og of Bor	ing:	SL8MW17		
G	ulfco Marine Superfur Freepo	nd Site			Drilling	etion Date: Company: upervisor:	07/18/06 Best Drilling Servic Tim Jennings, P.G.		Borehole Diameter (in.): Total Depth (ft): Northing:	8.25 33 13554520.95	
	PBW Project		352		Drilling	Method:	Hollow Stem Auger 5 ft continuous core		Easting: Ground Elev. (ft. MSL):	3155809.04 2.9	
	1 511 1 10,000	110, 10	JU2						TOC Elev. (ft MSL)	5.87	
Depth (ft)	Well Construction Diagram (ft/ft) U		scs			Des	nologic scription				
0 		0 6.8	4/5		SP	~70% m (0.5 to 2 medium sand, < (2.5 to 4	edium plasticity (2.5) SAND and c to high plasticity 5% oyster shell f .0) Poorly graded	CLAY, < layey S. clay, ~ ragmen I SAND,	n, moist, ~ 30% fine-gra 5% oyster shell fragm AND, brown, moist, ~ 3 60% to 70% very fine ts, soft. brown, moist, very fine n, moist, ~ 30% fine-gra	ents, soft. 0% to 40% to fine-grained -grained, soft.	
10 —		0 8.7	3.25/5		H	~70% clay. (5.0 to 11.3) Sandy CLAY, brown, moist, ~ 30%, fine-grained sand, ~70% high plasticity clay, ~ 10% thin sand interbeds.					
15 —		5.6 7.2	3.5/5	SP	ysM				ND and SILT, brown, to 30% high plasticity fir		
- - -		2.3	2/5								
20 —		42.8 36.4	5/5		P	(15.0-30	.0) SAND as abo	ove with	n decreassing silt conte	ent below 15.0	
25 — — — —	: *	38.2 40.1	3.5/5								
30 —		50 52.6	3/3			20% fine		80% to	ttled gray and brown, r o 90% medium plasticit es.		

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Well Materials

(0.0 to 15.0) Casing, 2" sch. 40 PVC (15.0 to 25.0) Screen, 2" sch. 40 PVC, 0.01 slot (25.0 to 25.3) End Cap

Annular Materials

(0.0 to 9.0) Portland Cement with ~ 5% bentonite gel (9.0 to 11.0) Bentonite chips, 3/8" (11.0 to 25.3) Sand, 20/40 silica

	R, BEHLING a					L	Log of Boring: NB4MW18							
G	iulfco Marine I	 Mainter	ance			etion Date:	05/30/07		Borehole Diameter (in.)					
_	Superfun					Company:	Master Monitorin	g Services, Inc.	Total Depth (ft):	19				
	Freepor					pervisor:	Len Mason, I		Northing:	13554255.42				
			_				Hollow Stem		Easting:	3154474.18				
	PBW Project	No. 13	52		Samplir	ng Method:	5 ft. split spoo	on	Ground Elev. (ft. MSL):	2.5				
									TOC Elev. (ft MSL)	4.96				
Depth (ft)	Diagram a b Sex				SCS			De	thologic scription					
2 -		0.0	4/5	So	JSM ·	∖ fine-gra	ined		brown, slightly moist, von throughout.	/ery				
4 =		0.4				(0.4 to	42 2) CLAV	' brown do	rk brown, and some b	la akiah brawa				
6		0.3	5/5		H	moist, h becomi increas	igh plasticit ng gray and ing, 5 feet to	y, slightly fin brown/stroi 6.9 feet ha	m, root fibers in top 2 : ng brown, mottled, mo as some areas of satu	feet, at 2.5 fee isture content ration, mostly				
10 —		0.2				8.9 fee		some gray i	mottling at 6.9 feet, be	ecomes gray a				
·		0.4	5/5						·	•				
14 —		0.5			/L				layey SILT, mostly gra % clay, ~ 5-10% very f					
16		0.5	2/2				n shell fragr	nent layer a	t 12.3 feet.					
18 —		-	2/2		H	(17.9 to slightly	20.0) Silty moist, high p	CLAY, gray plasticity, firm	with some olive-gray, m.	slightly mottle				
\exists							·							
22 —														
24 -			·											
26 -					٠.									
28 =						•								
30 =														

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Well Materials

(0.0 to 7.5) Casing, 2" sch. 40 PVC (7.5 to 17.5) Screen, 2" sch. 40 PVC, 0.01 slot (17.5 to 18.0) End Cap

Annular Materials

(0.0 to 4.0) Portland Cement with 5% bentonite gel (4.0 to 6.0) Bentonite chips, 3/8" (6.0 to 18.0) Sand, 20/40 silica (18.0 to 20.0) Coated bentonite pellets

Gulfco Marine Maintenance Superfund Site Freeport, TX PBW Project No. 1352 Completion Date: 05/23/07 Drilling Company: Master Monitoring Services, Inc. Total Depth (ft): Field Supervisor: Tim Jennings, PG Drilling Method: Hollow Stem Auger Sampling Method: 5 ft. split spoon Ground Elev. (ft. MSL Depth (ft) Output Outp	17 13555039.92 3154974.73 MSL): 2.2 _) 5.08
Freeport, TX Field Supervisor: Tim Jennings, PG Drilling Method: Hollow Stem Auger Sampling Method: 5 ft. split spoon Freeport, TX Drilling Method: 5 ft. split spoon Freeport, TX Field Supervisor: Tim Jennings, PG Drilling Method: Hollow Stem Auger Sampling Method: 5 ft. split spoon Freeport, TX Field Supervisor: Tim Jennings, PG Drilling Method: Hollow Stem Auger Sampling Method: 5 ft. split spoon Freeport, TX Field Supervisor: Tim Jennings, PG Northing: Freeport, TX Field Supervisor: Tim Jennings, PG Freeport, TX Field Supervisor: Tim Jennings, PG Freeport, TX Field Supervisor: Tim Jennings, PG Freeport, TX Field Supervisor: Tim Jenuics Freeport, TX Field Supervisor: Tim Jenuics Freeport, TX Field Supervisor: Tim Jenuics Freeport, TX Fr	3154974.73 MSL): 2.2 L) 5.08
PBW Project No. 1352 Drilling Method: Hollow Stem Auger Easting:	MSL): 2.2 _) 5.08
TOC Elev. (ft MSL Construction	5.08
TOC Elev. (ft MSL Well Construction Diagram O O O O O O O O O O O O O O O O O O O	
0.1 2 4/5 0.4 0.0 0.4 0.4 0.6 0.7 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9	low plasticity fines,
2 — 0.1 0.0 80% fine to medium-grained sand, soft. (0.4 to 7.5) Sandy CLAY, gray 0.4 - 1.4 feet be brown with gray mottling below, moist, ~ 10-20% fine-grained sand, ~ 80-90% medium plasticity c	low plasticity fines,
0.0 0.4 (0.4 to 7.5) Sandy CLAY, gray 0.4 - 1.4 feet be brown with gray mottling below, moist, ~ 10-20% fine-grained sand, ~ 80-90% medium plasticity c	
	very fine to lays, firm to soft, fe
oxidized iron nodules, becomes saturated below oxidized iron nodules, becomes saturated below (7.5 to 12.0) Silty clayey SAND, brown, wet, ~ 2 fines, ~ 70-80% very fine to fine-grained sand, very fines, ~ 10-80% very fine to fine-grained sand, very fines, ~ 10-80% very fines, ~ 10-80% very fines, ~ 10-80% very fines, ~ 10-80% very fines, ~ 10-80% very fines, ~ 10-80% very fine to fine-grained sand, very fines, ~ 10-80% very	0-50% low plasticit
clay content below 11 feet, grades into sandy cl 0.2 5/5 (12.0 to 16.1) Sandy CLAY, grayish brown, wet, fine-grained sand, ~ 80% medium plasticity clay,	~10-20%
6 (16.1 to 17.0) SAND, poorly graded, brown, we	et, fine to
medium-grained, abundant shell fragments, soft	
8 — = 0 — =	
$2 \stackrel{ ext{}}{=}$	
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·]	
$\mathbf{s} = $	
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$\mathbf{B} \longrightarrow$	

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Well Materials

(0.0 to 4.0) Casing, 2" sch. 40 PVC (4.0 to 13.5) Screen, 2" sch. 40 PVC, 0.01 slot (13.5 to 14.0) End Cap

Annular Materials

(0.0-1.0) Potland Cement with 5% bentonite gel (1.0-3.0) Bentonite chips, 3/8" (3.0-14.0) Sand, 20/40 silica (14.0-15.0) Coated bentonite pellets

2" borehole caved in from 15-17'

		Scientis		 	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	·		
Gulfco Marin	e Mainte	nance		mpletion Date:	05/24/07	-	Borehole Diameter (in.):	8.25
	fund Site			lling Company:	Master Monitoring Ser		Total Depth (ft):	17.5
Free	ort, TX			ld Supervisor:	Tim Jennings, PG		Northing:	13554952.64
			·	lling Method:	Hollow Stem Aug	er	Easting:	3154011.31
PBW Proje	ect No. 13	352	Sa	mpling Method:	5 ft. split spoon		Ground Elev. (ft. MSL):	1.6
			,!	<u> </u>	 	_	TOC Elev. (ft MSL)	4.88
epth (ft) Well Constructi Diagram		Recovery (ft/ft)	USCS			Des	nologic	
2	0.0	5/5	CL	fine sand,			ark gray, wet, ~ 20% s clay, soft, abundant ro	_
4	0.0		CL				sh-brown with gray mo plasticity clay, firm, few	
6 - 0.0	4/5		nodule	S.	. '	with reddish-brown m	· 	
2	0.1 0.2	5/5	CA CA	~ 10 -2 (10.0 to silt, > 8 concre	o 12.4) Silty CL 0 % high plastic tions.	AY, reddity clay, s	dium plasticity clay, finish brown, wet, < 20% oft, a few small carbon	m to soft. low plasticity ate
1	0.2		CL CL	plastici (13.6 to	ty clay, very soft o 15.2) Silty CL	AY, reddi	wet, ~ 50 % silt, ~ 50 sh-brown with gray mo 0% medium plasticity o	ottling, moist,
;	0.2	2.5/2.5	CL		o 17.5) CLAY, (st, low plasticity, friable	
3 =								
) =								
2 =								
3 =								
3 –					-			

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Well Materials

(0.0 to 6.0) Casing, 2" sch. 40 PVC (6.0 to 15.5) Screen, 2" sch. 40 PVC, 0.01 slot (15.5 to 16.0) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with 5% bentonite gel (3.0 to 5.0) Bentonite chips, 3/8" (5.0 to 16.0) Sand, 20/40 silica

	R, BEHLING o					L	og of Borin	ng:	OMW21		
G	ulfco Marine M Superfun Freepor	d Site	nance		Drilling Field Su	etion Date: Company: Ipervisor:	05/21/07 Master Monitoring Services	s, Inc.	Borehole Diameter (in.): Total Depth (ft): Northing:	8.25 20 13555272.78 3154248.25	
	PBW Project	No. 13	52			rilling Method: Hollow Stem Auger Easting: 31 ampling Method: 5 ft. split spoon Ground Elev. (ft. MSL): 2. TOC Elev. (ft MSL) 5.7					
Depth (ft)	Well Construction Diagram Well (LATT) Well (LATT)		U	scs				ologic cription			
0 2 4		0.0	5/5		ÇL	fine-gra	ined sand, ~ 80-90	0% me	orown, moist, ~ 10-209 dium plasticity clays.		
6		0.0	4/5		CL	firm to s	soft, reddish-brown	with g	n-brown, moist, mediur ray mottling below 4 fe below 5.7 feet, wet be	eet, becomes	
? —		0.0	1/5			fine-gra fragmei by 15 fo medium	lined sand, ~ 80-90 nts, very soft. Shell eet, light gray, ~ 10 n-grained sand, ~ 5	0% me II fragn 0-20% 50-60%	Y, gray, wet, ~ 10-20% dium plasticity clay, a s nents and sand conter shell fragments, ~ 30- o medium plasticity clay	few shell nt increasing 40% fine to y. Sand	
16		0.1	1.25/2.5			fragme	nts, ~ 10% very fine	e-grain	grayish brown, ~ 5% of ed sand, ~ 85% med ween 16.3 and 17.5 for	ium plasticity	
18			2.5/2.5			(18.8 to	20.0) Silty CLAY, y clay, firm.	, gray,	moist, ~ 40-50% silt, ~	50-60% low	
22 -								•			
24						-			•		
26 -			•	-							
30							•				

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Well Materials

(0.0 to 8.0) Casing, 2" sch. 40 PVC (8.0 to 18) Screen, 2" sch. 40 PVC, 0.01 slot (18 to 18.5) End Cap

Annular Materials

(0.0 to 4.5) Portland Cement with 5% bentonite gel (4.5 to 6.5) Bentonite chips, 3/8" (6.5 to 18.5) Sand, 20/40 silica

2" borehole caved in from 18.5-20"

	R, BEHLING sulting Engine					L	og of	Borir	ng: 3	SA4MV	W22	
G	ulfco Marine Superfur Freepoi	nd Site	nance		Drilling Field Su	etion Date: Company: pervisor:	05/30/07 Master Monito	ı, PG	s, Inc. To	orehole Diam otal Depth (ft) orthing:		8.25 15 13553934.09
	PBW Project	No. 13	52			rilling Method: Hollow Stem Auger Easting: ampling Method: 5 ft. split spoon Ground Elev. (ft. MSL): TOC Elev. (ft MSL)						3154726.12 5.5 7.79
Depth (ft)	Well Construction Diagram	PID (ppm-v)	Recovery (ft/ft)	U	scs				Lithol Descri	ogic	,	
0 <u> </u>		0.4	4.9/5		SW.	plasticit some ro 2.2 fee slightly (3.1 to clay, ~	y clay, mo bot materia t to ~ 20-3 moist, dec 4.4) Clay 30% silt, ~	estly fine- al, subrou 30%, som cayed pla ey silty S. 60% ve	grained unded, lone grave ant mate AND, gray fine-g	pose, clay of l and shell f rial at 3.0 to ayish-brown rained, sub	ome med content in ragments 3.1 feet , slightly rounded	dium-grained, ncreasing at s, becoming t. moist, ~ 10% sand.
6 — 8 — 10 —		0.4 0.3 0.6	5/5	SI	NISC	\mediun (5.0 to and silt	n plasticity 8.1) Claye , ~ 70% se	, firm. ey silty Sa ubrounde	AND, gra	ayish-black ayish-brown rained sand t 6 feet, ind	, moist, ~	- 30% clay
? — 14 —		0.3	4.9/5		ŻH	moist, h	igh plasti	city clay,	soft bec	eddish-brow omes mostl cayed vege	y gray wi	ome gray, very th some
16	•									•		
20 <u> </u>				•								
22 —									-			
24 -												
26 -												

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Well Materials

(0.0 to 4.5) Casing, 2" sch. 40 PVC (4.5 to 14.5) Screen, 2" sch. 40 PVC, 0.01 slot (14.5 to 15.0) End Cap

Annular Materials

(0.0 to 2.0) Portland Cement with 5% bentonite gel (2.0 to 4.0) Bentonite chips, 3/8" (4.0 to 15.0) Sand, 20/40 silica

Cons	sulting Engine	ers and	Scientis	sts		Log of Boring:	NC2B23B			
G	ulfco Marine I	Mainter	ance		Comple	etion Date: 05/31/07	Borehole Diameter (in.):	12/8.25		
_	Superfur				Drilling	Company: Master Monitoring Services, Inc.	Total Depth (ft):	40		
	Freepor	t, TX				pervisor: Tim Jennings, PG	Northing:	13554659.58		
				_		Method: Hollow Stem Auger	Easting:	3154227.19		
	PBW Project	No. 13	52 [*]	L	Sampling Method: 5 ft split spoon Ground Elev. (ft. MSL): 2.0					
		г					TOC Elev. (ft MSL)	2.37		
epth (ft)	Well Construction Diagram Wecovery (#/#) Construction Diagram			US	cs	Des	hologic scription			
0 = = = = = = = = = = = = = = = = = = =				C		(0.0 to 0.7) Sandy CLAY, dark medium plasticity clay, soft, abu		sand, ~ 90%		
·						(0.7 to 12.6) Sandy CLAY with a moist to locally wet, ~ 10-20% verified medium plasticity clay, firm and less increasing below 4.5 feet, brown no odor, becoming wet at 10 feet to 12.6 feet.	ery fine-grained sand, ocally friable, gray mott ocally friable, gray mott organic matter from 8	- 80-90% ling to 8.5 feet,		
4 <u> </u>		0.0			<u> </u>	(12.6 to 14.1) Sandy silty CLA fine-grained sand, ~ 20-30% s oyster shells thin (< 0.1") sand	ilt, ~ 50% medium plas interbeds.	ticity, a few		
3 =		0.0	3/5		4	(14.1 to 15.0) Silty CLAY, reddi (0-20% silt, ~ 80-90% medium p (15.0 to 17.3) Silty sandy CLAY 10-15% very fine-grained sand	plasticity clay, firm. /, gray, moist to locally and silt, ~ 85-90% med	wet, ~ lium plasticit		
2		0.0	5/5	C		clay, very soft, very silty (wet at (17.3 to 23.1) Silty CLAY, greer 90% medium plasticity clay, stiff, and 22.2 feet.	nish-gray (olive), moist,	< 10% silt, ~		
4		0.0 0.0		e		(23.1 to 26.4) Silty CLAY, reddi 20-30% silt, ~ 70-80% medium p				
			5/5			(26.4 to 35.3) Silty sandy CLAY moist, ~ 10-20% silt, ~ 5% fine-g	rained sand, ~ 80-90%	6 medium		
2 -		0.5	5/5	Š		plasticity clay, very firm, locally fr poorly graded, fine-grained, gray brown to reddish-brown with gra carbonate nodules locally from 3	y sand at 27.8 to 28 fe y mottling below 30 fee	et, becoming		
4 🗐		0.0	·		////	,				
		0.0	5/5		H	(35.3 to 40.0) CLAY, reddish medium plasticity, very stiff, f	at clay.			
′ =				Note: Portland Cement with 5% bentonite gel placed in the annular space outside of the surface casing (0.0 to 15.0 foot						

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Well Materials

(0.0 to 15.0) Surface Casing, 8" sch. 40 PVC

Annular Materials

(15.0 to 40.0) Portland Cement with 5% bentonite gel

Lithologic description for 0 to 15 foot depth interval from NC2MW28 boring

PASTOR, BEHLING & Consulting Engineer			Log of Boring:	ND4MW24B	
Gulfco Marine M	aintenance	Comp	letion Date: 05/29/07	Borehole Diameter (in.):	12/8.25
Superfund		Drillin	Company: Master Monitoring Services, Inc.	Total Depth (ft):	34
Freeport,		Field	Supervisor: Len Mason, PG	Northing:	13554569.19
		Drillin	Method: Hollow Stem Auger	Easting:	3154749.48
PBW Project N	No. 1352	Samp	ling Method: 5 ft split spoon	Ground Elev. (ft. MSL):	3.5
	· · · · · · · · · · · · · · · · · · ·			TOC Elev. (ft MSL)	5.7
Depth (ft) Well Construction Diagram	PID (ppm-v) Recovery (ft/ft)	USCS	De	thologic scription	
0	1.3 0.8 4/5 0.8 0.3 0.1 0.1 0.3 4/5 0.4	CH CH	(0.0 to 0.2) Silty SAND, light by soft. (0.2 to 0.6) Sandy CLAY, dark ly sand, ~ 80% medium plasticity (0.6 to 2.0) Sandy CLAY, local becomes highly plastic below ~ (4.2 to 8.2) Sandy CLAY as a 5.9 feet, with thin sand interbed (8.2 to 10.4) Sandy CLAY, brownish grained sand, ~ 20% (15.6 to 17.0) Poorly graded Sand, ~ 60% highly plastic clay (10.4 to 15.6) Poorly graded Sand, ~ 20% (15.6 to 17.0) Sandy CLAY, brownish grained sand, ~ 20% (15.6 to 17.0) Sandy CLAY, brownish gray, wet, low to med (20.5 to 22.5) Silty CLAY with shownish gray, wet, low to med (20.5 to 22.5) Silty SAND, brownish grained with some medium (22.5 to 24.0) Grades into a silf wet, high plasticity, soft. (24.0 to 34.0) Slightly silty CLAY wet, high plasticity, becoming sliphote: Portland Cement with 5% space outside of the surface cases.	c brown, moist, ~ 20% v clay, slightly firm. brown, becomes black by black and dark reddictives and dark reddictives. cover, reddish-brown, modes locally. bove, reddish-brown, modes locally. bown, wet, ~ 40% very firmy, soft. CAND with clayey sand, high plasticity clay, very soft. CAND and sandy CLAY and be plasticity clay, very soft. CAND and sandy CLAY arown to grayish brown, plasticity CLAY, soft. come very fine-grained signal plasticity, soft. who to brownish-gray, we a sized grains, loose. by CLAY with trace sand, ghtly firm to stiff at 29 for the placed in the placed	ery fine-graine elow 1.5 feet. sh-brown, oist, wet below ne-grained brown, wet, ~ y soft. , brown, wet, ~ ay, very soft. wet, <5% sand, gray to et, sand is d, brown to gray eet. the annular

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Well Materials

(0.0 to 19.0) Surface Casing, 8" sch. 40 PVC (0.0 to 21.5) Casing, 2" sch. 40 PVC

(21.5 to 26.5) Screen, 2" sch. 40 PVC, 0.01 slot (20.0 to 27.0) Sand, (26.5 to 27.0) End Cap (27.0 to 34.0) coated Lithologic description for 0 to 19 foot depth interval from ND4W03 boring

Annular Materials

(0.0 to 17.0) Portland Cement with 5% bentonite gel (17.0 to 20.0) Bentonite chips, 3/8" (20.0 to 27.0) Sand, 20/40 silica (27.0 to 34.0) coated bentonite pellets

PASTOR, BEHLING & WE Consulting Engineers an		.c	L	og of Boring:	NG3MW25B	
Gulfco Marine Maint Superfund Site Freeport, TX		Drilling Field St		05/30/07 Master Monitoring Services, Inc. Tim Jennings, PG	Borehole Diameter (in.): Total Depth (ft): Northing:	12/8.25 35 13555045.25
PBW Project No. 1	352		Method: ng Method:	Hollow Stem Auger 5 ft split spoon	Easting: Ground Elev. (ft. MSL): TOC Elev. (ft MSL)	3154968.84 2.2 4.91
Depth (ft) Well Construction Diagram	Recovery (ft/ft)	USCS			thologic escription	14.01
0	2/5 5/5	SP. SP. SP. SP. SP. SP. SP. SP. SP. SP.	(0.4 to with grasand, nodule (7.5 to fines, clay co (12.0 to fine-grareddish (16.3 to medish (17.5 to plastici) (18.4 to (19.0 to (21.1 to poorly clay, very clay, very clay, very (22.7 to medium (32.0 to me	0.4) Clayey SAND, brome to medium-grained states and compared to medium-grained states and compared to medium-grained states and compared to the compared to t	grand, soft. y 0.4 - 1.4 feet becoming, ~ 10-20% very fine to city clays, firm to soft, feelow 4 feet. D, brown, wet, ~ 20-50% e-grained sand, very soft ades into sandy clay at a sandy clay at a sandy clay, were seen to sandy clay, very graded, brown to gray, very ded, with abundant she with SAND, brown, wet, ~ grained sand as thin intragments. et, medium plasticity, soft poorly graded, fine-grained sand sand interbeds, ~ 50% medium plasticity, soft poorly graded, fine-grained sand sand sand sand sand sand sand san	ing reddish brown fine-grained ew oxidized iron work low plasticity oft, increasing 12 feet. ~10-20% soft becomes wet, sand is fine ell fragments (~ ~90% medium terbeds. oft, with ~ ained, soft. wet, ~50% edium plasticity ed, ~30% oist, ~90%

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Well Materials

(0.0 to 15.0) Surface Casing, 8" sch. 40 PVC (0.0 to 17.0) Casing, 2" sch. 40 PVC

(17.0 to 27.0) Screen, 2" sch. 40 PVC, 0.01 slot (27.0 to 27.5) End Cap

Annular Materials

(0.0 to 13.5) Portland Cement with 5% bentonite gel (13.5 to 15.5) Bentonite chips, 3/8" (15.5 to 27.5) Sand, 20/40 silica

Lithologic description for 0 to 17 foot depth interval from NG3MW19, borehole caved in from 27.5 to 35 feet.

	R, BEHLING of the control of the con					L	Log of Boring: OB26B						
Gi	ulfco Marine I	Mainter	ance		Comple	etion Date:	05/30/07		Borehole Diameter (in.):	8.25			
0.	Superfun			:		Company:	Master Monitoring Se	ervices, Inc.	Total Depth (ft):	40			
	Freepor	t, TX			Field Supervisor: Tim Jennings, PG Northing:					13554963.98			
						Method:	Hollow Stem Aug	jer	Easting:	3154008.4			
	PBW Project	No. 13	52		Samplin	ng Method:	5 ft split spoon		Ground Elev. (ft. MSL):	1.6			
		_							TOC Elev. (ft MSL)	NA			
Depth (ft)	Well Construction Diagram	PID (ppm-v)	Recovery (ft/ft)	US	SCS		·		nologic cription				
0 = 2 = =					<u>SP</u>	│ \ fine-gra		0% mediu	, dark gray, wet, ~ 20% um plasticity clay, soft,				
6				(0.8 to 7.5) Sandy CLAY, reddish-brown with gray mottling, moi 10% fine sand, ~ 90% medium plasticity clay, firm, few oxidized nodules.									
8 — 10 —					2¢//	(7.5 to 10-20%	10.0) Sandy 0 6 fine-grained s	LAY, gray and, ~ 80	y with reddish-brown m 0% medium plasticity cl	nottling, moist, ay, firm to soft			
12				77	3T///	silt, > 8	0% high plastic	city clay, s	ish brown, wet, < 20% oft, a few small carbor	ate concretion			
14				\ \\\	27 //	plastici (13.6 to	ty clay, very sof o 15.2) Silty Cl	t. AY, redd	, wet, ~ 50 % silt, ~ 50 ish-brown with gray mo	ottling, moist,			
3 =					3L//	∖soft.	· ·		and, ~ 80% medium p				
18		0.0	3/3			\ <u>nodule</u> (17.0 to	s, firm. 20.2) Silty CL	AY, gray v	with brown mottling, mo	oist, ~ 10-20%			
20 - 22 -		0.0			i i	∖tew carb	onaceous nod	ules.	90% medium plasticity ray, moist, ~ 40% low p	J. J.			
24		0.0	5/5			\ \60% fir	re-grained sand	d, firm.	with brown mottling, r				
26		0.0				∖nodule	s		clay, very firm, a few o				
28		0.0	5/5 ,			\10-20%	6 silt, ~ 80-90%	medium į	ish brown with gray mo plasticity clay, < 5% ca tured, very stiff.				
30 =		0.0											
32 = 34 = 3		0.0	⁻ 5/5			10% silt carbona	, ~ 90% mediui	m plasticit Idish brov	ish-gray with brown mo y clay, very firm to stiff, vn below 34 feet, incre t.	few			
36 — 38 — 40 =			5/5 ·						bentonite gel placed in sing (0.0 to 17.0 foot o				

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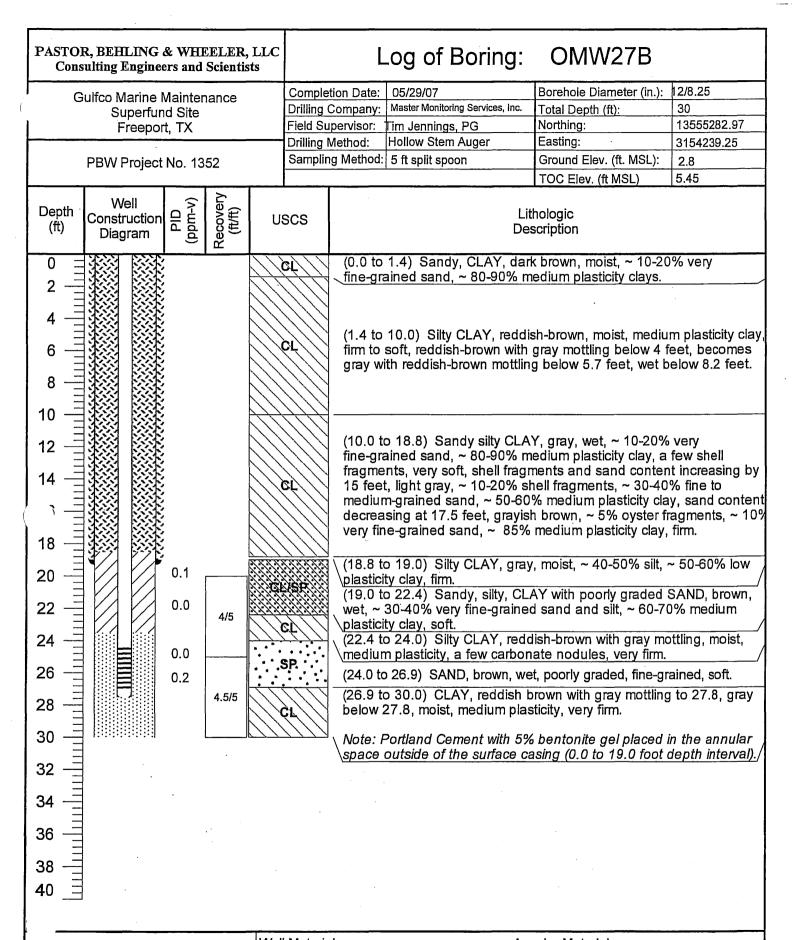
Well Materials

(0.0 to 17.0) Surface Casing, 8" sch. 40 PVC

Annular Materials

(17.0 to 40.0) Portland Cement with 5% bentonite gel

Lithologic description for 0 to 17 foot depth interval logged from OMW20 boring



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<u>Well Materials</u>

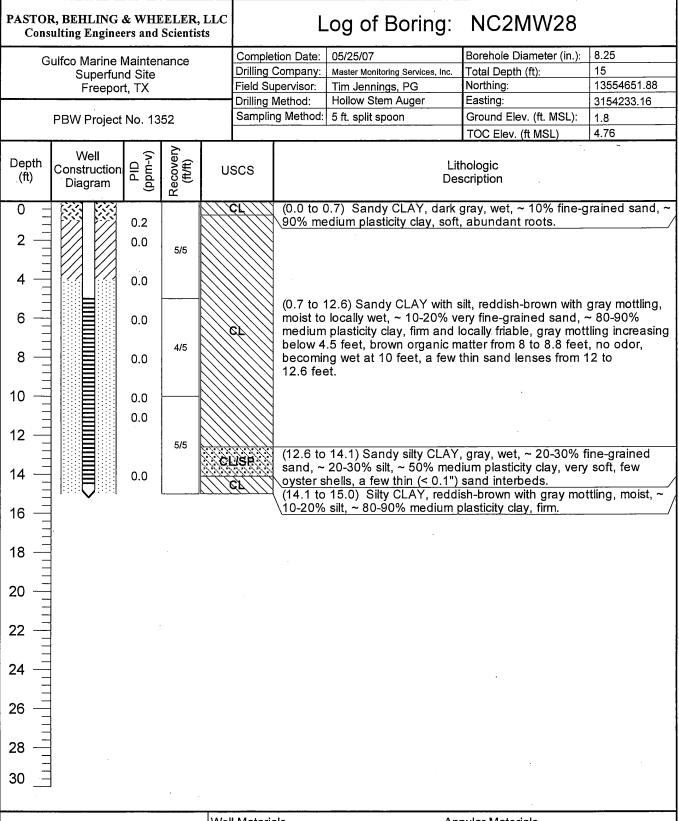
(0.0 to 19.0) Surface Casing, 8" sch. 40 PVC - (0.0 to 24.5) Casing, 2" sch. 40 PVC

(24.5 to 27) Screen, 2" sch. 40 PVC, 0.01 slot (27.0 to 27.5) End Cap

Lithologic description for 0 to 19 foot depth interval logged from OMW21 boring

Annular Materials

(0.0 to 18.5) Portland Cement with 5% bentonite gel (18.5 to 23.5) Bentonite chips, 3/8" (23.5 to 30.0) Sand, 20/40 silica



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Well Materials

(0.0 to 5.0) Casing, 2" sch. 40 PVC (5.0 to 14.5) Screen, 2" sch. 40 PVC, 0.01 slot (14.5 to 15.0) End Cap

Annular Materials

(0.0 to 1.0) Portland Cement with 5% bentonite gel (1.0 to 4.0) Bentonite chips, 3/8" (4.0 to 15.0) Sand, 20/40 silica

	R, BEHLING oulting Engineer					L	og of Bori	ng:	ND3MW29	
G	ulfco Marine I	Maintor	ance		Comple	etion Date:	05/31/07	-	Borehole Diameter (in.):	8.25
0	Superfun		lance			Company:	Master Monitoring Service	ces, Inc.	Total Depth (ft):	17.5
	Freepor				Field Su	pervisor:	Tim Jennings, PG		Northing:	13554733.7
		·			Drilling Method: Hollow Stem Auger				Easting:	3154525.86
	PBW Project	No. 13	52		Samplir	ng Method:	Ground Elev. (ft. MSL):	2.9		
									TOC Elev. (ft MSL)	5.33
Depth (ft)	Well Construction Diagram	(v-mdd) Old	Recovery (fl/ft)	U	SCS			Des	nologic cription	
2 —		4.2 117	4.5/5		CA\\	locally < 5% g	moist, ~ 20% fine- ravel and shell fra	-grained agments	ravel, brown with gray d sand, ~ 80% medium s, soft. dark gray, wet from 1.8	n plasticity clay,
6		249 276	4.5/5		CA	moist b			n, decaying marsh type	
8		162	4.070		ZSM. VIL	sand, ~ fragme	· 30-80% silt, ~ 30 nts and black stai	0-60% r ining fro	brown, wet, ~ 10-20% nedium plasticity clay, om 8.3 to 8.6 feet, mod m 10.5 to 12 feet.	soft, wood
? ====================================		585	3/5			10-30%	silt, wet locally fr	om 12.	AND and silty SAND, b 5 to 13.5 feet and wet e-grained sand, locally	below 15.4
16		884 527	2,5/2.5	SF	YSM CL	NAPL v modera modera 12.5 to	risible within sand Ite NAPL (sheen) Ite organic odor, s 13.5 feet.	from 12 visible soil sam	2.5 to 13.5 feet and si within sand from 15 to aple (SB-MW29-01) col	ight to 16.4 feet, lected from
18 — 20 —						\ 80-90%			sh-brown, wet, ~ 10-2 very soft, no NAPL sta	
22				•						
24										
26										
28				٠						
30 _=			•				•			

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Well Materials

(0.0 to 7.0) Casing, 2" sch. 40 PVC (7.0 to 17.0) Screen, 2" sch. 40 PVC, 0.01 slot (17.0 to 17.5) End Cap

Annular Materials

(0.0 to 3.0) Portland Cement with 5% bentonite gel (3.0 to 5.0) Bentonite chips, 3/8" (5.0 to 17.5) Sand, 20/40 silica

	R, BEHLING					L	og of Boring:	NE3MW30B	
COHS	arms vusine	CIS AND	OCICHUS.					,	140.5/2.25
G	ulfco Marine	Mainte	nance			tion Date:	11/26/07	Borehole Diameter (in.):	12.5/8.25
	Superfui					Company:	Universal Drilling Services	Total Depth (ft):	35.5
	Freepo	rt, TX				ipervisor:	Len Mason, PG	Northing:	13554690.78
·						Method:	Hollow Stem Auger 5 ft core barrel	Easting: Ground Elev. (ft. MSL):	3154741.85
	PBW Project	t No. 13	352		Samplir	3.5			
								TOC Elev. (ft MSL)	6.70
Depth (ft)	Well Construction Diagram Wecovery (ff/ff) Well Construction Diagram		U	scs			hologic scription	·	
0 = 2 = 4 =			4.7/5	111	45	moist, plastic (0.9-2. fragme	8) CLAY, brown, moist, ent at 1.8 feet.	d, ~ 30% silt, soft, medi	wood
6			4/5		27	sandy mottlin	0) Sandy CLAY, gray, rr lenses, soft, medium-hig g below 5 feet. 2.5) Sandy CLAY, brown	gh plasticity, gray with s	ome brown
10			5/5		ST.	below plastic	10 feet, moist, ~ 20-30% ty, becomes wet below (7.0) Silty SAND, brown,	6 fine sand, very soft, r 11.2 feet.	nedium
16			2.5/3	SIV	I-SC	loose. (17.0-1	8.0) Clayey, silty, SAND), brown with some grav	/, wet, ~
18 - 20 -			2/2			\10-159 (18.0-2	% gray clay, ~ 30% silt, s 20.0) CLAY with some si n-high plasticity, become	sand is very fine, loose. Ity sand zones, brown,	moist, soft,
22 -		246	2/5	S	SIM((20.0-2	25.0) Silty SAND, brown, cal odor, sheen observed	wet, sand is very fine,	
26		205 133 135	2/2.5	· ·	C ISP	\sand, s	5.5) Slightly sandy CLA soft, medium-high plastic 6.4) Slightly clayey SAN	city, chemical odor.	//
28 - 30 - 3		86.4 535	2/2.5			clay lay (26.4-2	vers throughout, sand versels. Sand versels. Sandy CLAY, brow	ery fine, slight odor.	
32		ı	1/2.5	S	W	very fin	7.5) Silty SAND with some, ~ 20% silt, chemical of	odor.	
34		3109 304	2.5/2.5		L	(27.5-2 high pl	8.5) Sandy CLAY, gray asticity, chemical odor, v il from 28-28.2 feet.	, moist, ~ 20-30% fine	
36		!	· · · · · ·	· · · · · · · · · · · · · · · · · · ·		(29.5-3) fine to	4.1) SAND, brown to gramedium sand, subround	led to subangular, stro	ng chemical
38						from 33	heen throughout, locally 3.9 to 34.1, soil sample (4.1 feet		
40 —	_	<u></u>		1		(34.1-3	5.5) CLAY, gray, moist, o NAPL staining or shee		
	DDT	T 7		Well	Materia	als	Anr	nular Materials	

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Well Materials

(0.0 to 19.5) Surface Casing, 12" sch. 40 PVC (0.0 to 18.5) Portland Cement with 5% be outside of surface casing (25.0 to 35.0) Screen, 2" sch. 40 PVC, 0.01 slot (0.0 to 23.0) Bentonite chips, 3/8" inside (35.0 to 35.5) End Cap

Annular Materials

(0.0 to 18.5) Portland Cement with 5% bentonite gel outside of surface casing surface casing (23.0 to 35.5) Sand, 16/30 silica

Cons	ulting Engineers an	d Scien	tists					NE4MW31B	
G	ulfco Marine Mainte	enance		Completio	n Date:	06/13/08		Borehole Diameter (in.):	8.0/13.0
J	Superfund Site			Drilling Co		Universal Drilling		Total Depth (ft):	45
	Freeport, TX			Field Supe	rvisor:	Tim Jennings, P.G.		Northing:	3154903.18
	,	·		Drilling Me	thod:	Hollow Stem Auger		Easting:	13554709.81
	PBW Project No. 1	352		Sampling I	Method:	5 ft. split spoon	j	Ground Elev. (ft. MSL):	3.0
								TOC Elev. (ft MSL)	6.01
Depth (ft)	Well Construction Diagram	(v-mqq)	Recovery (ft/ft)	USCS			Desc	ologic cription	
0 _				RD BASE	(0.0-0.	8) Caliche road base	е.	·	
\dashv		0.2	5/5						
		0.3		CHEH				rown mottling, moist, ~5 dium to high plasticity c	
5 —					ime-gr	ameu sanu, ~ 50 to	90% IIIE	dum to mgn plasticity c	iays.
` _		0.4		(////					
4		0.4	5/5	CH	(6.2-8.	5) Silty sandy CLAY	, brown	with gray mottling, mois	t to locally wet
\dashv		0.2	0/0	/////	∼5 to ′ ∖clay, s		na, ~15 1	to 20% silt, ~70 to 80%	mgn plasticity
., ⊣					(8.5-9.	4) Clayey SILT, grav	yish-bro	wn, wet, ~30 to 40% high	n plasticity cla
10 —				SM	\~60 to	70% silt. soft.		_	, -
		0.2			(9.4-11.3) Silty SAND, grayish-brown to brown, wet, ~10 to 30% silt, ~70				
			5/5	ML	(11.3-1	3.4) Sandv clavev !	siLT. br	own, wet, ~10 to 20% his	n plasticity cl
4		0.2		11111	\~20 to	30% fine-grained sa	and, ~50	to 70% silt, very soft.	
5 —		0.3		/ CH//				prown, wet, ~10 to 20% v	very fine-grain
-	M / MM	0.2		/////	sand,	~80 to 90% high pla	sticity c	ay, very soft.	
-			1/5						
\dashv			,,,,	NR	(16.0-2	0.0) NO RECOVER	Y.		
, 🗇									
:0 -									
		0.2							
4			2.5/5						
_								prown, wet, very fine-gra	
5				SP.	fine-ar	n-grained sand with a ained to fine-drained	~o% sne ∣sand w	ell fragments at 20.0 to 2 ith trace shell fragments	at 21.5 to 30
႕			İ			ace gray clay.	, saila W	onon magmonto	
. 🗇		ı	2.5/5		•				
			ŀ						
o —	1666666			•••••					
- 4				•					
-			0/5						
4			0/0						
_ ⊢				ND	(20.0.4	0 0) NO DECOVERY	/ lm #l=	ing a ands	
5 —	,			NR	(30.0-4	0.0) NO RECOVERY	r in tiow	ing sands.	
\exists			_						
4			0/5	ł					
\dashv									
	1	}		1			-		
\dashv		ļ	 	/////					
\dashv			0.25/5	CF			shoe o	f core barrell, only recov	ered 0.2',
7		ļ		11111	arilled I	ike clay.			
5				1111					
	TOTO TTT			l Materials				ar Materials	
	PBW					0" sch. 40 PVC		0) Cement/Bentonite slurry, i	
•	1 1/ 11			18.0) Casing, -28.0) Screen) PVC I0 PVC, 0.01" slot		0) Cement/Bentonite slurry, (′.0) 3/8" bentonite chips, insi	
	Behling & Wheeler			-28.3) End Ca				9.7) 16/30 silica sand	
	ouble Creek Dr., Suite		ľ	•					
	ound Rock, TX 7866								
(512) 6	571-3434 Fax (512)	0/1-344	ю 📖	is boring lo					

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists						L	og of Borin	g: NE4MW32C	
	Sulfco Mar	ine Mainte	enance		Completion	n Date:	06/13/08	Borehole Diameter (in.): 8.0/13.0/17.5	
		erfund Site			Drilling Co	mpany:	Universal Drilling	Total Depth (ft): 80	
		eport, TX	•		Field Supe		Tim Jennings, P.G.	Northing: 3154802.32	
					Drilling Me	thod:	Hollow Stem Auger	Easting: 13554653.07	
	DDW/ Dro	ioot No. 1	252		Sampling I		5 ft. split spoon	Ground Elev. (ft. MSL): 3.2	
	FBVVFIC	ject No. 1	302		Outripling (victiod.	о п. эрик эрооп	TOC Elev. (ft MSL) 6.31	
Depth (ft)	Const	/ell ruction gram	Old (bbm-v)	Recovery (fl/ft)	USCS		Lithologic Description		
0 _					RUBASE	(0.0-0	5) Caliche road base	plugged sampler, no recovery.	
5 —			0.5	0.25/5	E	(0.5-5.	0) Sandy CLAY.		
 			0.5	0.5/5	- ML	(5.0-10 80% lo	0.0) Sandy SILT, brov ow plasticity silt.	n, wet, ~20 to 30% fine-grained sand, ~70 to	
10 —			0.1	5/5	ŞM.	clay in	14.4) Silty clayey SAN thin (<0.5") interbeds ained sand, soft.	D, brown, wet, ~10 to 20% medium plasticity, 20 to 30% low plasticity silt, ~50 to 80%	
15 —			0.1	5/5	SP.	(14.4-19.2) SAND, poorly graded, brown, wet, very fine-grained to fine-grained sand, soft; black, natural organic material locally.			
20 —			0.6		/¢r/			own, wet, medium plasticity clay, locally	
25 —				5/5	ÇL.	sand,	26.2) Sandy CLAY, gr ~70 to 80% medium p	nyish-brown, wet, ~20 to 30% fine-grained asticity clay, very soft, barrel filled with ide casingresulted in poor recovery.	
-			44.1	2.5/5	SP		9.0) SAND, grades to ained to fine-grained s	poorly graded sand, brown, wet, very and, very soft.	
30 —			14.2	3/5	.SP	plastic	5.0) Poorly graded Soity clay in sand locally agments throughout.	ND and clayey SAND, wet, ~10% high , ~90% fine-grained to medium-grained sand	
35 —			0	2/5	:SP		0.2) SAND, poorly grained sand, compact,	ded, brown, wet, very fine-grained to gray below 39.0.	
→ ∪			, [CH	(40.2-4	1.7) CLAY, gray, wet.	high plasticity clay, soft.	
PBW (0.0-2 (0.0-4 (0.0-6 (64.0				48.8) Surface 64.0) Casing, -74.0) Screen -74.3) End Ca	Casing, 1 Casing, 1 2" sch. 40 , 2" sch. 4	4" sch. 40 PVC 0" sch. 40 PVC 0 PVC 0 PVC 40 PVC, 0.01" slot	Annular Materials 0.0-10.0) Bentonite chips, Inside 10" casing 0.0-20.0) Cement/Bentonite slurry, outside 14" casi 0.0-48.8) Cement/Bentonite slurry, outside 10" casi 10.0-58.3) Cement/Bentonite slurry, Inside 10" casi 58.3-62.0) 3/8" bentonite chips 52.0-76.0) 16/30 silica sand 76.0-80.0) Coated bentonite pellets ttely from the original report.		

Gi	ulfco Marine Mainte			Completion		06/13/08	Borehole Diameter (in.):	8.0/13.0/17.5
	Superfund Site			Drilling Co Field Supe		Universal Drilling Tim Jennings, P.G.	Total Depth (ft): Northing:	80 3154802.32
	Freeport, TX			Drilling Me		Hollow Stem Auger	Easting:	13554653.07
	PBW Project No. 1	352		Sampling I			Ground Elev. (ft. MSL):	3.2
	i bwi iojectivo. i	00Z					TOC Elev. (ft MSL)	6.31
Depth (ft)	Well Construction Diagram	Old (h-mdd)	Recovery (ff/ff)	USCS			_ithologic escription	
45 —			3/5	SP		45.8) Poorly graded SAN ty clay, ~80% fine-graine	D and clayey SAND, gray, v ed sand.	vet, ~20% hig
		9.2		CHI		47.1) CLAY, gray, wet, h		
			5/5	197			ed, gray, wet, fine-grained to)
_		0.9				m-grained sand interbedd 47.7) CLAY, gray, wet.	ed in clay.	
50 —					4	, <u>g</u> ,		
-			3/3	/ ct//			sh-brown with gray mottling,	
	성 없					ained sand, ~90 to 95% ents near top, very stiff a	medium plasticity clay, a fe	w small shell
_			2/2		паупк	ents near top, very still a	mu dense.	
55 —				++++			··	
\dashv			2/2		(55.0 ₋₁	50 0) Silty CLAY grav wi	th local red mottling, moist,	~5 to 10% si
30 —		0.1	3/3	C#	very t	nin interbeds and lenses, to 58.5.	a few silt lenses and thin (<0.1') interbe
				1247	(60.0-	60.5) CLAY, gray, ~20 to	30% shell fragments.	
_		0	5/5					
i5 —		Ì						
		0.2		/ÇH//	(60.5-)	72.7) CLAY, very dark gra Lorganic material at 62.5	ay, moist, high plasticity, cl to 68.0, a few shell fragme	ay with abund
_			5/5		IIatula	organic material at 02.0	to oo.o, a lew shell hagine	
_ +		0.5	ŀ	/////				
0 —		ļ		/////				
		l						
4		0.3	5/5	SHELL	(72.7-7	3.0) SHELL laver, appea	rs to contain some water.	
4			1	/ CH/	(73-73	.8) CLAY, similar to the n	naterial at 60.5 to 72.7.	
5 —	Y	}		/////		•	,	
\dashv			`\	/kg/	(73.8-8	30) CLAY, bluish-grav mo	pist, high plasticity clay with	few shell
\neg	·///	0.3	5/5	1/2/1/	fragme	nts, very firm to stiff, thi	n silt bed at 77.7.	

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Well Materials

(0.0-20.0) Surface Casing, 14" sch. 40 PVC (0.0-48.8) Surface Casing, 10" sch. 40 PVC (0.0-64.0) Casing, 2" sch. 40 PVC (64.0-74.0) Screen, 2" sch. 40 PVC, 0.01" slot (74.0-74.3) End Cap

Annular Materials

(0.0-10.0) Bentonite chips, inside 10" casing (0.0-20.0) Cernent/Bentonite slurry, outside 14" casing (0.0-48.8) Cernent/Bentonite slurry, outside 10" casing (10.0-58.3) Cernent/Bentonite slurry, inside 10" casing (58.3-62.0) 3/8" bentonite chips (62.0-76.0) 16/30 silica sand (76.0-80.0) Coated bentonite pellets

			HEELER, LLO	Log of Boring	: NB4PZ01					
, G	iulfoo Ma	arine Maint	enance	Completion Date: 07/21/06	Borehole Diameter (in.):	2				
		perfund Site		Drilling Company: Best Drilling Services, Inc.	Total Depth (ft):	22				
		eeport, TX		Field Supervisor: Len Mason, P.G.	Northing:	13554276.47				
				Drilling Method: Direct Push	Easting:	3154459.85				
	DDW/ De	oject No. 1	1252	Sampling Method: 4 ft split spoon	Ground Elev. (ft. MSL):	2.3				
	FDVVFI	oject No. 1	1352		TOC Elev. (ft MSL):					
Depth (ft)	PID (ppm-v)	Recovery (ft/ft)	USCS	Litholog Descript						
0 -			SC/SM .	(0.0 to 0.7) Clayey silty SAND, brown, vei	y fine-grained, subrour	nded, quartz,				
2 -	0.5	3.1/4		very low plasticity to uncohesive, dry.						
6 —	0.8	3.6/4	CL	(0.7 to 13.1) CLAY, brown and gray, slightly mottled, soft, medium plas slightly moist, becoming soft and moist below 5.4; becoming very soft at becoming very moist to saturated at 8.0; becoming mostly greenish-gray						
8 —	0.9									
10 -	0.9	3.8/4		some brown, moist to very moist, saturated in areas at 9.0.						
12	0.9	3.7/4	- NAT	(13.1 to 18.9) Slightly sandy clayey SILT,	brown, and greenish g	ray, very soft,				
'' -	1.5			uncohesive, saturated.						
18	1.6	4/4		·						
20 =	4.0									
20	1.9	2/2	CL	(18.9 to 22.0) CLAY, gray to olive gray, fir dry, trace gravel.	m, medium plasticity, sl	ightly moist to				
22	1.7 [[]	·	· · · · · · · · · · · · · · · · · · ·							
24										
26						•				
28										
<u> 30 – </u>										

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Comments:

A temporary piezometer (screened interval 9 - 19 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists				ıc ı	Log of Boring	: NC3PZ02	-			
		wim n Billiota		Completion Date: 0	7/21/06	Borehole Diameter (in.):	2			
ا	Gulfco Marine Maintenance			<u> </u>	est Drilling Services, Inc.	Total Depth (ft):	28			
		Superfund Site Freeport, TX			Len Mason, P.G.	Northing:	13554519.81			
	-16	seport, 1A			irect Push	Easting:	3154398.52			
				Sampling Method: 4		Ground Elev. (ft. MSL):	2.9			
	PBW Pr	oject No. 1	352	Camping Motrica.	it opik opoon	TOC Elev. (ft MSL):	2,0			
Depth (ft)	PID (ppm-v)	Recovery (ft/ft)	USCS		Litholog Descript					
2	0.6	3.6/4								
6 -	0.9	3.9/4	d	(0.0 to 14.6) Silty CLAY, reddish-brown to brown, soft, low plasticity, sligh moist; becoming gray and reddish-brown to brown, slightly mottled at 3.0;						
10	1.5	3.6/4		becoming greenish-gray and brown, slightly mottled, very soft at 8.0.						
14		4/4			ey SILT, brown and gra	ayish-brown, saturated	, very soft,			
16 —	0.6			uncohesive.						
\exists				(15.9 to 17.0) CLA	Y, gray, medium plastic	city, soft to firm, moist.				
18	1	3.8/4		(17.0 to 19.3) Silty	CLAY, brown and gray	/, very soft, uncohesive	e, very moist.			
20 =	1.9			(19.3 to 20.0) CLA\ slightly moist.	Y, gray, some greenish	n-gray, soft to firm, med	ium plasticity,			
22	2	3.7/4	CL	(20.0 to 22.5) Silty	CLAY, brown and gray	v, very soft, uncohesive	, very moist.			
24	1.4									
26	1.1	3.8/4		(22.5 to 28.0) CLAY, trace gravel, gray and olive-brown, mottled, reddish-brow at 26.7 to 27.6, firm, slightly moist to dry, medium plasticity.						
28	1.7									
30			· · · · · · · · · · · · · · · · · · ·	Comments:						

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Comments:

A temporary piezometer (screened interval 12.5 - 22.5 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

			EELER, LLO	Log of Bori	ng: ND1PZ03				
Gi	Sup	erine Mainte perfund Site peport, TX		Completion Date: 07/21/06 Drilling Company: Best Drilling Services, Field Supervisor: Len Mason, P.G. Drilling Method: Direct Push	Borehole Diameter (in.): Inc. Total Depth (ft): Northing: Easting:	2 18 13554945.56 3154263.8			
	PBW Project No. 1352			Sampling Method: 4 ft split spoon	Ground Elev. (ft. MSL): TOC Elev. (ft MSL):	2.2			
Depth (ft)	PID (v-mdd)	Recovery (ft/ft)	USCS		nologic cription				
2 -	6.2	2.9/4		(0.0 to 1.2) Slightly sandy, silty CLAY quartz sand; firm, medium plasticity, s		subrounded,			
6 —	8.8	3.7/4		(4.0.145.7). OLAV, have and access		di			
10	25.2 12.5	3.9/4	CL	(1.2 to 15.7) CLAY, brown and gray, slightly mottled, soft to firm, mediun plasticity, slightly moist, very moist at 4.0, some black staining at 10.2, sa and very soft at 12.0.					
12	24.9	3.9/4							
16 -	17.9 29.3	1/2		(15.7 to 18.0) CLAY, gray, firm, medi	um plasticity, dry to slightly	moist.			
20						·			
22 -									
24 = 26 = 26					•				
28.	-			·					
30			· T :	omments:		·			

Pastor, Behling & Wheeler, LLC 2201 Double Creek Dr., Suite 4004 Round Rock, TX 78664 Tel (512) 671-3434 Fax (512) 671-3446 Comments:

A temporary piezometer (screened interval 5.5 - 15.5 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists					Log of Borin	g: ND3PZ04			
G	Gulfco Marine Maintenance Superfund Site Freeport, TX			Completion Date: Drilling Company: Field Supervisor:	07/21/06 Best Drilling Services, Inc. Len Mason, P.G.	Northing:	2 20 13554698.81		
	PBW Project No. 1352			Drilling Method: Sampling Method:	Direct Push 4 ft split spoon	Easting: Ground Elev. (ft. MSL): TOC Elev. (ft MSL):	3154524.94 2.4 		
Depth (ft)	PID (v-mdd)	Recovery (ft/ft)	USCS		Lithol Descri	ogic			
0 <u> </u>	60.1	3/4	CL	(0.0 to 1.1) Slightly sandy CLAY, gray, some olive-brown; very fine-grained subrounded sand; soft, low plasticity, slightly moist. (1.1 to 4.5) CLAY, gray, some olive-brown, soft to slightly firm, medium plasticity, slightly moist.					
6 -	167 181	2.9/4		(4.5 to 6.5) Silty CLAY to clayey SILT, brown and gray, mottled, very soft, lov plasticity, very moist to saturated, slight odor.					
10	304	3.5/4		(6 5 to 17 0) San	dy clavey SILT brown	; very fine-grained, poorly	y sorted		
12 -	121 166	3.9/4			tz sand; uncohesive, s		, conca,		
16 -	13 28.1	3.8/4	CL	(17.0 to 20.0) CL odor, becoming gi	eenish-gray, firm to me	very soft, medium plasti edium plasticity, slightly n	city, moist, noist to dry,		
20 = = = = = = = = = = = = = = = = = = =	8.1 [[]								
24	•	_							
26				·					
28 = 30						•			

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Comments:

A temporary piezometer (screened interval 7 - 17 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists				Log of Boring	Log of Boring: NF1PZ05				
G	Sup	rine Mainte perfund Site peport, TX		Completion Date: 08/01/06 Drilling Company: Best Drilling Services, Inc. Field Supervisor: Tim Jennings, P.G. Drilling Method: Direct Push	Borehole Diameter (in.): Total Depth (ft): Northing: Easting:	18 13555211 3154490.84			
		oject No. 1	352	Sampling Method: 4 ft split spoon	Ground Elev. (ft. MSL): TOC Elev. (ft MSL):	2.2			
Depth (ft)	(v-mqq)	Recovery (ft/ft)	USCS	Litholog Descript					
2 1 1	3.1	1/4	CL	(0.0 to 6.2) Sandy CLAY, dark grayish-brown, moist, ~ 20% fine-gra ~ 80% medium plasticity clay, firm.					
6 —	4.9 5.8	3/4		(6.2 to 9.0) Silty alayay SAND brown wa	t 50% modium plasti	oity finos			
8 -	4.8		SC/SM	(6.2 to 8.0) Silty clayey SAND, brown, we 50% very fine to fine-grained sand, soft.		city lines, ~			
10	3.6	4/4	CH SM/SC	(8.0 to 9.7) Silty CLAY, gray to brown, wet, high plasticity, soft. (9.7 to 12.0) Silty clayey SAND, brown, wet, ~ 20% to 30% high plasticity and the second secon					
12	1.3		СН	(12.0 to 13.4) Silty sandy CLAY, brown, v sand and silt, ~ 60% to 70% high plasticity		fine-grained			
14 -	1.2	4/4	SMICH	(13.4 to 16.7) Silty SAND and CLAY, brownines (thin clay interbeds), ~ 70% to 80%					
18 —	1.3	2/2	CH/SP	(16.7 to 18.0) Interbedded CLAY and SA (< 0.1 inch) beds and ~ 70% high plasticity					
20 -									
22									
24									
26									
28									
30 =									

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Comments:

A temporary piezometer (screened interval 8 - 18 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists				Log of Boring	: NF3PZ06	
Gulfco Marine Maintenance Superfund Site Freeport, TX				Completion Date: 07/31/06 Drilling Company: Best Drilling Services, Inc. Field Supervisor: Tim Jennings, P.G. Drilling Method: Direct Push	Borehole Diameter (in.): Total Depth (ft): Northing: Easting:	2 16 13554991.77 3154813.75
	PBW Pr	oject No. 1	352	Sampling Method: 4 ft split spoon	Ground Elev. (ft. MSL): TOC Elev. (ft MSL):	2.5
Depth (ft)	으로 Recovery USCS (ft/ft)			Litholog Descript	gic ion	
2	2.6 1.8	4/4		(0.0 to 4.8) Silty CLAY, dark brown to gra abundant roots, firm.	ıy, moist, medium plasti	city fines,
6	2.3	2/4	CL			
10 —	1.3 2.7 4.5	4/4		(4.8 to 13.1) Silty sandy CLAY, brown, we 70% medium plasticity fines, very soft.	et, ~ 30% to 40%, fine	sand, ~ 60% to
14	4.7	4/4	CH SW	(13.1 to 14.7) Silty CLAY, brown, moist, h clay. (14.7 to 16.0) Well-graded SAND, brown,		
16 ————————————————————————————————————				sand with shell fragments.		
30		<u></u>				

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Comments:

A temporary piezometer (screened interval 3 - 13 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists				Log of Boring: SA4PZ07					
G	ulfoo Mo	rino Maint	nonco	Completion Date:	07/20/06	Borehole Diameter (in.):	2		
Gulfco Marine Maintenance Superfund Site				Drilling Company:	Best Drilling Services, Inc.	Total Depth (ft):	24		
Freeport, TX PBW Project No. 1352				Field Supervisor:	Len Mason, P.G.	Northing:	13553911.84		
				Drilling Method:	Direct Push	Easting:	3154746.34		
					4 ft split spoon	Ground Elev. (ft. MSL):	5.4		
_	PBW Pr	oject No. 1	352			TOC Elev. (ft MSL):			
Depth (ft)	(v-mdd)	Recovery (ft/ft)	USCS	Lithologic Description					
2 -	0.5	3/4	SC CL SM/SC	trace gravel. (1.5 to 2.0) Silty (medium plasticity, (2.0 to 4.1) Claye	ey SAND, brown with stro CLAY, brown, reddish-brorganic material at base by silty SAND; brown, gra- grained, subrounded, p	rown, some black, slight e. ayish-brown, and reddis	tly mottled, soft,		
6 —	0.6	3.5/4	CL	some root materia (4.1 to 8.0) CLAY	I, slightly moist, partially	decayed plant material ium plasticity; becomes	at 4.0. mottled gray,		
8 🗕	0.6				<u>,</u>				
10	0.8	3.9/4	SC/SM		y, silty SAND, grayish-brounded, poorly sorted s				
12 —	0.7	3.9/4					·		
16	0.6	,			CLAY, reddish-brown w ium plasticity, moist; bed				
18	0.5	4/4	CL	reddish brown and trace black at 10.5; becoming reddish-brown at 14.9; becoming greenish-gray with local areas of reddish-brown, very soft, very mois at 16.0; becoming dry and firm at 22.6.					
20 —	0.7								
22	0.7	3.9/4							
24	1.1								
26					•				
28							-		
30 =									

PBW

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Comments:

A temporary piezometer (screened interval 12 - 22 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

This boring log should not be used separately from the original report.

PASTOR, BEHLING & WHEELER, LLC Consulting Engineers and Scientists				Log of Boring: SD3PZ08				
G	ulfco Ma	arine Maint	enance	Completion Date: 07/20/06	Borehole Diameter (in.):	2		
Superfund Site				Drilling Company: Best Drilling Services, Inc.	Total Depth (ft):	28		
Freeport, TX				Field Supervisor: Len Mason, P.G.	Northing:	13554214.87		
				Drilling Method: Direct Push	Easting:	3154926.63		
	ם או ם	!	1050	Sampling Method: 4 ft split spoon	Ground Elev. (ft. MSL):	5.6		
	PRM P	roject No. 1	1352		TOC Elev. (ft MSL):			
Depth (ft)	PID (v-mdd)	Recovery (ft/ft)	0000	Lithologic Description				
0 -			FIII	(0.0 to 0.5) GRAVEL with sand.				
2 —	2 1.1 3.5/4 CL (0.5 to 2.4) CLAY, brown, greenish-gray medium plasticity, slightly moist.				and black, slightly mottled, soft,			
			SM	(2.4 to 4.6) Silty SAND, light brown, sand is fine-grained, subrounded, poorly sorted, mostly quartz, unconsolidated, slightly moist, becoming silty clay near				
4 -	1.2			base.				
6	1.9	4/4		(4.6 to 8.7) CLAY, dark gray to dark greenish-gray, some reddish-brown, slightly mottled, soft, medium plasticity, slightly moist, trace root material.				
8 —	2		CL					
J	_		01					
_	1.6			(8.7 to 9.8) Sandy silty CLAY, grayish-bro				
10 —		4/4		sand stringers, very thin, sand is very fine-				
\exists				(9.8 to 11.5) CLAY, gray and strong brow	n, mottled, soft, mediu	m plasticity,		
				moist.				
12 —	1.7			(11.5 to 13.7) Clayey, sandy SILT, brown	and brownish gray so	£t.		
\exists		ĺ	···· ML-···-	unconsolidated, very moist to saturated, b				
=	1.6	l		unconsolidated, very moist to saturated, b	econing saturated at	14,1,		
14 —		3.5/4						
		ŀ						
=)						
16 —	1.5	ļ 						
-								
10 7								
18	1.5	3.8/4				i		
\exists				(13.7 to 25.5) Slightly clayey, sandy SILT,	, brown, sand is verv fir	ne-grained,		
20	10		- ML/SC ·	mostly quartz, unconsolidated, saturated,	sand stringers through	out, slightly less		
20 =	1.2		<u> </u>	saturated at 21.9.	- ~			
コ								
22 —	1.1	3.7/4						
	1.1	J. / /- 				:		
コ		[
24	1.6							
	1.5							
7								
26	1.6	4/4	2.55					
- '. \exists		"7	C)	(25.5 to 28.0) CLAY, greenish-gray and b	rown, mottled, firm, me	dium to high		
. 7			OL	plasticity, slightly moist.	•			
28 —	1.1		<u> </u>		·			
=	•••							
20 7				·				
<u>30 – </u>			· · 		·			
				Comments:				

PBW

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Comments

A temporary piezometer (screened interval 12 - 22 ft.) was installed adjacent to this location.

The borehole was plugged with bentonite pellets.

This boring log should not be used separately from the original report.

APPENDIX E

CPT PROFILES

CPT Data

Elevation



Client

 Job Number
 04.1908-0042

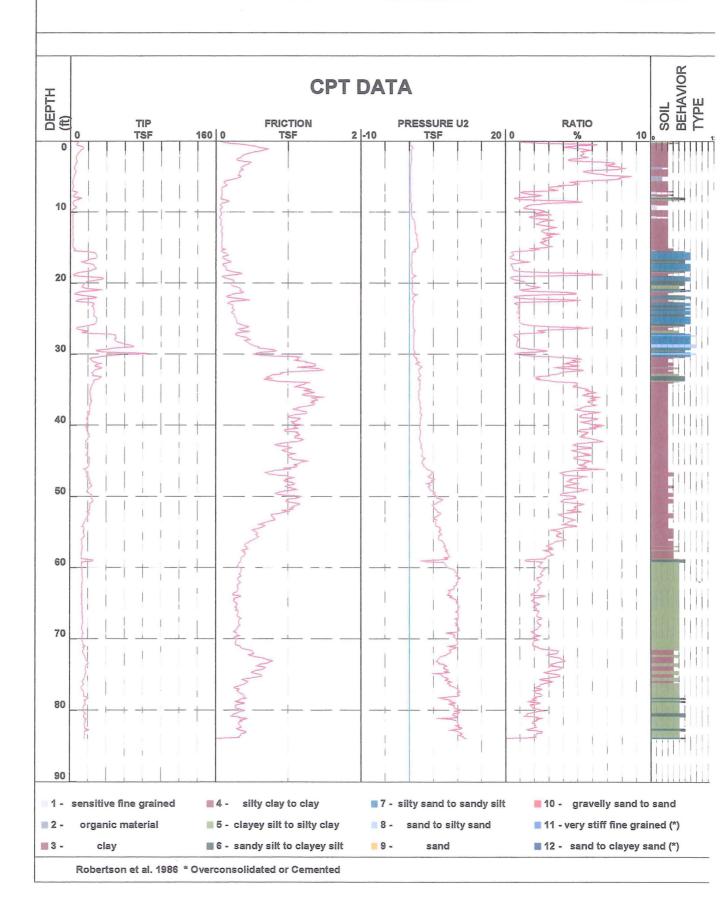
 Operator
 ALBERT FONSECA

CPT Number <u>NG3-CPT1</u>

Date and T 03-Jun-2008 08:55:23

Location <u>Gulfco Site-Freeport-TX</u>
Cone Number <u>A15F2.5CKEHW1636</u>

Water Table _____ 0.00 ft



CPT Data



Job Number 04.1908-0042

Operator ALBERT FONSECA

Client

CPT Number NC2-CPT3

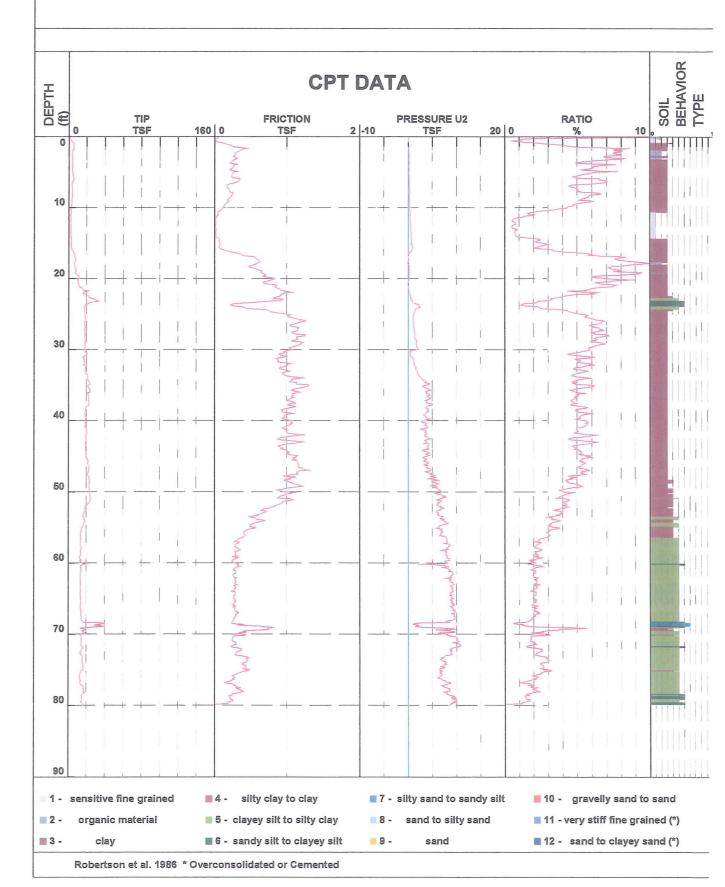
Date and T 02-Jun-2008 14:04:29

Elevation

Location Gulfco Site-Freeport-TX

Cone Number A15F2.5CKEHW1636

Water Table 0.00 ft



CPT Data

Elevation



Job Number 04.1908-0042 Operator **ALBERT FONSECA**

Client

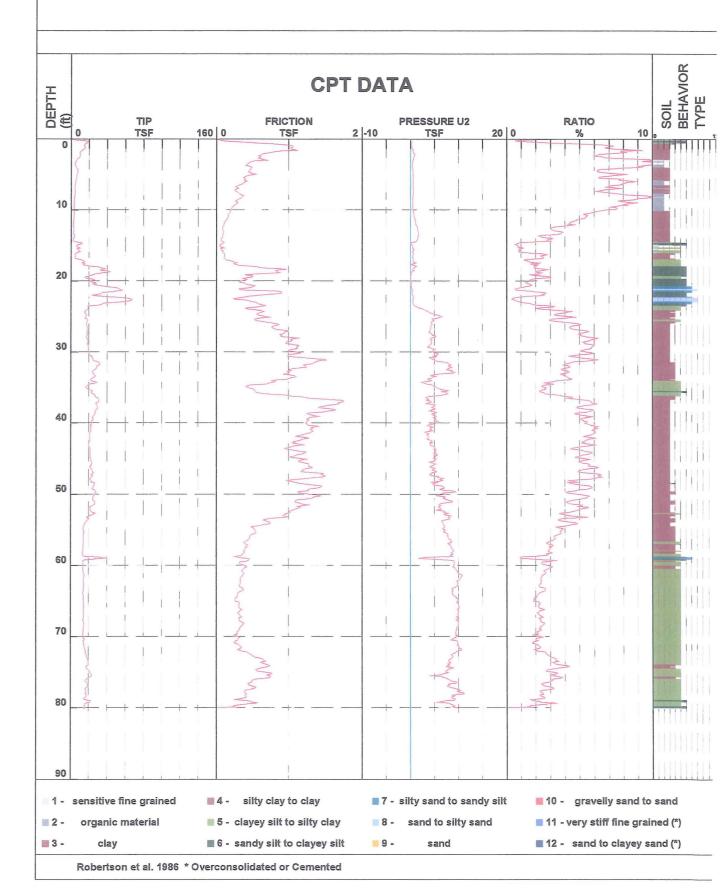
CPT Number OCPT-4 Date and T 03-Jun-2008 16:42:24

Location

Gulfco Site-Freeport-TX

Cone Number A15F2.5CKEHW1636

Water Table 0.00 ft



-fugro

CPT Data

Job Number 04.1909-0001

Robertson et al. 1986 * Overconsolidated or Cemented

CPT Number OCPT5

Location

Gulfco-Freeport-TX

Operator

Albert Fonseca

Date and Tin 07-Jan-2009 10:20:32

Cone Number F7.5CKEHW2/B0390

